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Report No: PAD2860

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF SDR 32 MILLION
(US$45.00 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOZAMBIQUE

FOR THE

MOZAMBIQUE CONSERVATION AREAS FOR BIODIVERSITY AND DEVELOPMENT - PHASE 2

August 29, 2018

Environment and Natural Resources Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 30, 2018)

Currency Unit =	MZN (New Mozambique Metical)
MZN 59.19 =	US$1
US$1.40 =	SDR 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
ANAC	National Administration of Protected Areas *(Administração Nacional das Áreas de Conservação*)
BIOFUND	Foundation for the Conservation of Biodiversity
CA	Conservation Area
CBO	Community-based Organization
CEO	Chief Executive Officer
CLP	Conservation Leadership Program
CNR	Chimanimani National Reserve
CPF	Country Partnership Framework
DA	Designated Account
DLI	Disbursement-linked Indicator
DNT	National Treasury Directorate *(Direcção Nacional do Tesouro)*
EBDG	Environment Business and Development Group
ENMC	National Climate Change Strategy *(Estratégia Nacional para as Mudanças Climáticas)*
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EX-ACT	Ex-ante Carbon Emissions Tool
FAO	Food and Agriculture Organization
FM	Financial Management
FNDS	National Sustainable Development Fund *(Fundo Nacional de Desenvolvimento Sustentável)*
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GoM	Government of Mozambique
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IDA	International Development Association
IFR	Interim Financial Report
ILM	Integrated Landscape Management

INE	National Statistics Institute *(Instituto Nacional de Estatística)*
IPF	Investment Project Financing
LDN	Land Degradation Neutrality
LMU	Landscape Management Unit
MASA	Ministry of Agriculture and Food Security (*Ministério da Agricultura e Segurança Alimentar*)
M&E	Monitoring and Evaluation
METT	Management Effectiveness Tracking Tool
MFD	Maximizing Finance for Development
MGS	Matching Grant Scheme
MGU	Matching Grant Unit
MICULTUR	Ministry of Culture and Tourism (*Ministério da Cultura e Turismo*)
MIMAIP	Ministry of Sea, Inland Waters and Fisheries (*Ministerio do Mar, Aguas Interiores e Pescas)*
MITADER	Ministry of Land, Environment, and Rural Development *(Ministério da Terra, Ambiente e Desenvolvimento Rural)*
MozBio	Conservation Areas for Biodiversity and Development
MSMEs	Micro, Small, and Medium Enterprises
MSR	Maputo Special Reserve
NBT	Nature-based Tourism
NGO	Nongovernmental Organization
NPF	New Procurement Framework
NPV	Net Present Value
NR	National Reserve
OP	Operational Policy
PACEs	Small Emerging Commercial Farmers *(Pequenos Agricultores Comerciais Emergentes)*
PAD	Project Appraisal Document
PCR	Saving and Credit Groups *(Poupança de Crédito Rotativo)*
PDO	Project Development Objective
PF	Process Framework
PFM	Public Finance Management
PIM	Project Implementation Manual
PIU	Project Implementation Unit
POPMR	Ponta de Ouro Partial Marine Reserve
PPF	Peace Parks Foundation
PPP	Public-private Partnership
PPR	Procurement Post Review
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
QCBS	Quality- and Cost-Based Selection
REDD	Reducing Emissions from Deforestation and Forest Degradation
RPF	Resettlement Policy Framework
SA	Social Assessment
SANParks	South African National Parks
SAPA	Social Assessment for Protected Areas
SCD	Systematic Country Diagnostic

SDR	Special Drawing Rights
SLM	Sustainable Land Management
SMEs	Small and Medium Enterprises
SoP	Series of Projects
STAR	System for Transparent Allocation of Resources
Sustenta	World Bank Agriculture and Integrated Landscape Management Project
TA	Technical Assistance
TFCA	Transfrontier Conservation Area
UNFCCC	United Nations Framework Convention on Climate Change

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Mozambique	Mozambique Conservation Areas for Biodiversity and Development - Phase 2	
Project ID	**Financing Instrument**	**Environmental Assessment Category**
P166802	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[ ] Contingent Emergency Response Component (CERC)
[✓] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
20-Sep-2018	30-Nov-2023

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To improve management of target conservation area landscapes and enhance the living conditions of communities in and around these conservation areas.

Components

Component Name	Cost (US$, millions)

Component 1: Strengthening Capacity and Financial Sustainability of National Conservation Institutions	15.00
Component 2: Improving Conservation Areas Management in target landscapes	17.00
Component 3: Promoting conservation-compatible rural development and integrated landscape management in target landscapes	13.00

Organizations

Borrower:	Ministry of Economy and Finance
Implementing Agency:	Fundo Nacional de Desenvolvimento Sustentavel (National Sustainable Development Fund)

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	45.00
Total Financing	45.00
of which IBRD/IDA	45.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	45.00
IDA Grant	45.00

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Total Amount
National PBA	0.00	45.00	45.00
Total	**0.00**	**45.00**	**45.00**

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024

Annual	1.89	6.38	10.68	12.12	9.92	4.00
Cumulative	1.89	8.27	18.96	31.08	41.00	45.00

INSTITUTIONAL DATA

Practice Area (Lead)

Environment & Natural Resources

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Low

9. Other	
10. Overall	Moderate

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Performance Standards for Private Sector Activities OP/BP 4.03		✓
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10		✓
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

Schedule 2. Section I. A3

The Recipient, not later than three months after the Effective Date shall create and thereafter maintain, at all times until the completion of the Project, a unit in each Conservation Area Landscape, each led by a unit coordinator and including safeguards and value chain specialists, with a mandate and resources satisfactory to the Association. These units will coordinate Project implementation activities in their respective Conservation Area Landscapes.

Conditions

Type	Description
Effectiveness	Article V. Effectiveness. 5.01. The Additional Conditions of Effectiveness consist of the following: (a) The Subsidiary Agreement has been updated and thereafter executed on behalf of the Recipient and BIOFUND in accordance with terms and conditions satisfactory to the Association.
Type	Description
Effectiveness	Article V. Effectiveness. 5.01. The Additional Conditions of Effectiveness consist of the following: (b) The Project Implementation Manual has been updated and adopted by the Recipient in a manner satisfactory to the Association.
Type	Description
Effectiveness	Article V. Effectiveness. 5.02. The Additional Legal Matter consists of the following, namely that the updated Subsidiary Agreement has been duly authorized or ratified by the Recipient and BIOFUND, and is legally binding upon the Recipient and BIOFUND in accordance with its terms.

I. STRATEGIC CONTEXT

A. Country Context

1. **Mozambique is richly endowed with natural resources.** The country has ample arable land, water, energy, mineral resources and recently discovered natural gas offshore, three deep seaports, and a relatively large potential pool of labor. Mozambique's substantial natural capital includes 36 million ha of arable land, and 32 million ha of natural forests (mainly miombo dry forests but also large mangrove areas). Its 2,700 km long coastline, the 4th longest in Africa, harbors some of the most spectacular coral reefs in the world and several highly productive estuaries. The country has outstanding terrestrial, freshwater, marine, and coastal species biodiversity, counting more than 10,000 species, 10 percent of which are endemic or nearly endemic. Among the most significant terrestrial and coastal biodiversity areas are the Chimanimani massif, the Maputaland area, and the wetland and tidal areas of the Zambezi Estuary.

2. **Mozambique is one of the poorest countries in the world despite recent economic growth and significant natural capital.** Mozambique's economy has experienced some of the world's fastest growth rates since the end of its devastating civil war in 1992, with annual average economic growth of approximately 7.5 percent in the last decade—largely driven by foreign investments. However, the country still ranks 181 out of 188 in the United Nations Development Programme Human Development Index (2017) and has approximately 70 percent of its 28 million population living in extreme poverty (World Bank, 2016a[1]; World Bank, 2016b[2]). In addition, Mozambique suffered from a hidden debt crisis[3] in 2016, that caused GDP growth to decrease, inflation to rise, and debt levels to keep unsustainably high.

3. **Mozambique is in a transitional period.** The main challenges for the country are to restore macroeconomic stability after the hidden debt crisis, and reestablish confidence through improved economic governance and increased transparency while carrying out structural reforms in support of the private sector. At the same time, Mozambique needs to ensure that the use of its vast stocks of nonrenewable natural resources (particularly natural gas) translates into sustainable development for its population while ensuring that renewable natural resources (such as forests, wildlife, and fisheries) are managed sustainably.

4. **Current and future impacts of climate change pose a threat to the nation's economic development and livelihoods.** Mozambique is ranked the third most vulnerable country to climate change in Africa. Extreme weather-related shocks pose a significant risk to growth and poverty reduction. It is estimated that climate change could cost Mozambique between US$2.3 billion and US$7.4 billion from 2003 to 2050. Climate impacts compound challenges facing communities lacking access to resources and techniques for maintaining agricultural productivity and coping with extreme weather events. Droughts are the most frequent disaster and pose a major constraint to most of the population (80 percent) relying heavily on rain-fed agriculture. Mozambique has a long history of catastrophic flooding, which occurs almost annually during the rainy season, while cyclones are common to the exposed coastline of

[1] World Bank Group. (2016). Republic of Mozambique: Systematic Country Diagnostic. World Bank, Washington.
[2] World Bank. (2016). Poverty and Shared Prosperity 2016: Taking on Inequality. Washington, DC: World Bank.
[3] In 2016, undisclosed government loans worth up to $2bn to set up three state-backed tuna fishing companies were discovered, and this caused a halt to Mozambique's economic success story. For more details, please see the latest CPF (2017-2021): *http://documents.worldbank.org/curated/en/540001493517702187/pdf/MZ-CPF-Final-clean-March-23-04052017.pdf*

Mozambique from October to April, which damage infrastructure, disrupt water sanitation and electricity supply systems, and degrade the coastal environment.

B.1 Sectoral and Institutional Context

5. **Mozambique's renewable natural resources provide global public goods, such as biodiversity and climate stabilization (5.6 billion tons of CO_2 equivalent are stored in its forests), and nationally significant ecosystem services, such as maintenance of water quality and quantity for irrigation and electricity generation.** They also provide goods and services to the local population, such as freshwater, food, construction material, medical material, and fuel sources. The rural population (70 percent of the total) is highly dependent on the direct use of natural resources. It is estimated that in some areas, such as the Gorongosa District, miombo woodlands contribute 19 percent of household cash income and 40 percent of household subsistence (non-cash) income.

6. **In recognition of the value of these resources and the need to preserve them, Mozambique established a network of conservation areas (CAs) that cover around 23 percent of the country's land surface.** It consists of seven national parks, 10 national reserves, one environmental protection area, 17 controlled hunting blocks (*coutadas*[4]), over 50 privately run game farms (*fazendas de bravio*), and two community reserves. Mozambique's total ecosystem services value was estimated at over US$5 billion for 2009, half of the gross domestic product (GDP) for that year (Niquisse and Cabral 2017[5]).

7. **The management of CAs in Mozambique depends on several actors.** The National Protected Areas Administration (*Administração Nacional das Áreas de Conservação*, ANAC) is the main entity in charge of managing CAs and of overseeing the work of entities in charge of co-managing CAs in partnership with ANAC. It was established in 2011 as a parastatal and is guided by its Strategic Plan 2015–2024. It currently faces limited financial resources and human capacity. The Foundation for the Conservation of Biodiversity (BIOFUND) is a private foundation established in 2011 to promote conservation in Mozambique. BIOFUND manages a Conservation Endowment Fund to ensure long-term financing of biodiversity conservation as well as sinking funds that provide operating resources to the CA system. The National Sustainable Development Fund (*Fundo Nacional de Desenvolvimento Sustentável*, FNDS) was established in 2016 to raise and channel funds related to environmental management and rural development. It currently manages several World Bank-financed projects and domestic revenues, including the Mozambique Conservation Areas for Biodiversity and Development 1 project (MozBio 1, P131965),[6] and plays an important role in the promotion of rural development activities around protected areas. Finally, private entities and nongovernmental organizations (NGOs) provide significant support to

[4] Coutadas are the state's public domain of CAs for sustainable use, managed for the protection of species and ecosystems, in which sports hunting activities are allowed. Coutadas are managed by private companies (safari operators) through a concession contract between the state and the operator and must comply with quotas determined annually by the CAs' administration/ANAC (Conservation Regulation Law of Mozambique).

[5] Niquice, S., Cabral, P. (2018). Assessment of changes in ecosystem service monetary values in Mozambique. Environmental Development, 25:12-22.

[6] Mozambique Conservation Areas for Biodiversity and Development (MozBio) Program aims to support the conservation of Mozambique's wildlife, biodiversity, and ecosystems and contribute to the livelihood of local communities living in CA landscapes. It is fully supported by the World Bank through a Series of Projects (SoPs), which started in 2015 with the approval of MozBio Phase 1 (US$40 million IDA and US$6.3 million GEF). More details are provided later in the Project Appraisal Document (PAD).

the management of CAs, including through long-term co-management agreements.

8. **Mozambique's CAs hold untapped potential for the development of tourism that can directly generate revenues for CAs and contribute more broadly to the local and national economies.** The travel and tourism industry is regarded as a key priority economic sector for the country, but its contribution to the economy is still modest. Despite its improving travel and tourism competitiveness, which relies heavily on the country's rich natural resources, Mozambique remains uncompetitive as a tourism destination internationally. In 2017, the direct contribution of the sector to GDP was 3.4 percent and generated US$1.6 million of direct revenues for the CA network. However, Mozambique is expected to be one of the 10 fastest-growing destinations for leisure travel spending between 2016 and 2026, and nature-based sectors are expected to be the largest tourism growth areas in the coming decades. Tourism in Mozambique's CAs represents a significant opportunity for increased revenue generation across the CA network as well as for generating income and jobs for rural communities. As a labor-intensive sector with high multiplier effects and backward links, tourism can provide opportunities for diverse skilled and unskilled employment generation, particularly in the services industries, increased production (for example, processing of food and beverages and agriculture including fisheries), and greater entrepreneurship in areas with few other economic opportunities. However, an impediment to the growth of the sector is the cumbersome visa acquisition process; currently, visas have to be secured at the tourist's home consulate or upon arrival in Mozambique (with a risk of being denied entry). Electronic visas would allow tourists to secure visas online and facilitate entry into the country.

9. **CAs face several challenges to their long-term integrity and sustainability**, including the following:

(a) **Weak institutions.** Capacity to enforce forest, fisheries, and wildlife laws; to monitor biodiversity; and to engage with local communities in environmental protection is still insufficient, although increasing.

(b) **Insufficient human capacity.** Human resource capacity in biodiversity conservation, nature-based tourism (NBT) management, and community development is critically low. The current CA system faces significant skills gaps and requires a new cadre of conservation professionals.

(c) **Lack of financial sustainability.** The total annual budget for the CA system in recent years (2008–2014) has been between US$20 million and US$26 million, with 81 percent provided by international donors, 10 percent by the state, and 9 percent by the revenues generated by the CAs, with more than half of the funds allocated to two CAs: Gorongosa and Limpopo National Parks. The remaining CAs receive minimum levels of funding and are severely underfinanced. As an example, the average state funding of US$34 per km^2 is well below the average in the region: Zimbabwe (US$187 per km^2), Kenya (US$2,500 per km^2), and South Africa (US$2,720 per km^2). Significant progress has been made with the capitalization of BIOFUND's Endowment Fund (currently at US$24 million). At current rates of return (calculated on a five-year rolling average return), this capitalization can generate approximately US$750,000 per year in perpetuity for the Protected Areas Network. While important, this amount is clearly still below what is needed for effective management of the CA system, which therefore continues to require additional donor support. Scaling up and

diversification of income generation mechanisms are sorely needed to contribute to financial sustainability. Inadequate financing jeopardizes the achievement of such goals and limits the overall coverage potential as well as management effectiveness of established CAs.

(d) **Human encroachment and poverty around CAs.** National legislation allows for local people to live inside CAs, provided that their practices are in line with the CA management plan. With few and sometimes no formal employment opportunities and a lack of access to public goods, social services, credit, and markets, these communities are among the poorest.[7] There are also gender differences within communities in which women and young girls often face further limitations in managing the access and use of natural resources for their livelihoods. In addition, communities pose threats to CAs, given involvement in poaching, conversion and degradation of natural habitats (including slash and burn agriculture), and overexploitation of natural resources (plants and animals, including fish). To give a sense of what mentioned above, Table 1 presents some key socioeconomic statistics for the population living in the districts targeted by the project[8].

Table 1. Socioeconomic Statistics by Target District

	Poverty % (2007)	Literacy rate %		Access to safe water %	Access to improved sanitation	Women headed households	Health units per habitants
		M	F				
Matutuine	78	67.5	45.4	40.9	16.9	9	1/1,700
Marromeu	47	70.8	23.9	47.7	7.7	11	1/21,400
Sussundenga	52	71.3	34.9	19.5	7.4	16	1/51,000

Source: National Institute of Disaster Management (*Instituto Nacional de Gestão de Calamidades*) 2014.

10. **To address these challenges, the Government of Mozambique (GoM) has taken several measures.** It adopted a Conservation Policy in 2010, passed an overarching Conservation Law in 2014, created ANAC in 2011, and facilitated the establishment of BIOFUND and the capitalization of the Conservation Endowment Fund managed by BIOFUND. In 2015, the GoM adopted a 10-year Strategic Plan for Conservation Areas Management (2015-2024) and in 2017 signed an amendment to the Conservation Law, which imposes hefty penalties on environmental crimes and approved a series of specific regulation to help operationalize this law. The Ministry for Land, Environment, and Rural Development (MITADER) was established in 2015, to bring together several responsibilities over natural resources which were previously scattered across several ministries. MITADER, in turn, established the FNDS, to collect, manage, and invest funds linked to environment, forestry, and land and to manage donor-funded projects. FNDS has grown exponentially and currently manages over US$400 million in different World Bank-financed projects, including the MozBio 1 project (P131965).

11. **MITADER's approach to management of CAs is based on an Integrated Landscape Management (ILM) approach to natural resources management.** The ILM approach combines initiatives to foster rural

[7] The CAs targeted by the project currently have people inside the protected area. Maputo Special Reserve (MSR) has around 830 people inside the protected area and 7,500 in the buffer zone. The Chimanimani National Reserve (CNR) has around 380 people in the reserve and 27,000 in the buffer. Marromeu Reserve has around 5,000 people inside the reserve and 7,000 in its buffer. Source: ANAC (Survey Solutions data 2018).

[8] The areas targeted by the project will be presented in paragraph 16 of this PAD.

development, such as access to financing, infrastructure, and land tenure security, with initiatives to promote sustainable management of natural resources, including biodiversity protection (mainly through CAs but also through community-based and private-managed CAs) and restoration of degraded habitats. These initiatives take place in larger landscapes, which encompass different land uses, such as productive agriculture and forestry areas, CAs, and urban settlements. This approach of managing the wider landscapes is highly relevant to CAs, as most threats, including population pressure, come from outside their boundaries. This approach also entails a stronger presence and decentralized coordination mandate at the local level, through the establishment of Landscape Management Units (LMUs) and multi-stakeholder coordination platforms. The units are supposed to coordinate and monitor ILM progress at the provincial level and coordinate with district authorities and other stakeholders. The platforms, in turn, convene stakeholders around relevant issues in the landscape and help foster cooperation across projects, activities, and actors. The Conservation Law mandates the establishment of CA Management Councils, which have similar goals as the multi-stakeholder platforms, and will be supported by this project.

12. **The promotion of public-private partnerships (PPPs) for the management of CAs is another element of Mozambique's emerging 'conservation model'.** PPPs for conservation, also known as CA co-management, are agreements between the state and third parties to delegate certain responsibilities in managing a CA over an agreed period and under conditions established and monitored by the state. These agreements can be done through publicly tendered concessions, as in the case of Coutadas, or through long-term co-management contracts, such as the case of the Gorongosa National Park. Co-management has shown to increase conservation effectiveness by increasing funding and human resources availability, creating opportunities for knowledge exchange and skills transfer to CAs and also improving community benefits. In Mozambique, 65 percent of parks and reserves are under some type of co-management,[9] and there is government interest in increasing this number.

13. **Mozambique's strategic commitment to CAs and biodiversity management is expressed in its MozBio Program.** The MozBio Program aims to support the conservation of Mozambique's wildlife, biodiversity, and ecosystems and contribute to the livelihood of local communities living in CA landscapes. It has four pillars: (a) policies, legislation, and institutions; (b) financial sustainability; (c) biodiversity conservation management; and (d) community development. The MozBio Program, in turn, builds on the two-phased Transfrontier Conservation Area (TFCA) Program. Supported by the World Bank and other development partners from 1996 to 2013, the TFCA Program raised the conservation agenda to a core development priority and saw significant achievements including the development of the Conservation Policy and Law, the establishment of ANAC and BIOFUND, increased management capacity of key TFCAs (including the Limpopo National Park, Maputo Special Reserve (MSR), and Chimanimani Natural Reserve (CNR)), and the promotion of local community development initiatives.

14. **The MozBio Program is fully supported by the World Bank through a Series of Projects(SoP).** The World Bank's support to the MozBio SoP started in 2015 through the MozBio Phase 1 (P131965,

[9] Bazaruto and Gorongosa National Parks are under 'Integrated Co-management' agreements: shared governance and appointment of management and long-term devolution of day-to-day authority. Gilé and Niassa National Reserves operate under 'Bilateral Co-management': shared governance and day-to-day management authority. Banhine, Zinave, Limpopo National Parks, and Maputo Special and Ponta Ouro Reserves operate under 'Financial-Technical Support to Government Management'. Quirimbas National Park and CNR have NGO collaborations that provide support to reserves though not to core park management. Magoe, Marromeu, Niassa Lake, and Primeiras and Segundas Islands are managed by the state, without partnerships.

US$40 million IDA and US$6.3 million Global Environment Facility [GEF]) project. As of June 2018, 75 percent of funds were disbursed and 90 percent committed, while almost 70 percent of its indicators have exceeded their targets. MozBio Phase 2 (this project) builds on MozBio 1 results, integrates lessons learned, and seizes emerging opportunities to contribute to the overall MozBio Program goals. MozBio 1 has started addressing several of the challenges above (institutions, capacity, financial sustainability, and community development) which MozBio 2 will take forward, with a few modifications in approaches based on lessons learned (see below). As of June 2018, MozBio 1 main achievements include the following:[10]

- Management effectiveness of 1.8 million ha in 11 CAs improved
- About 38,000 direct project beneficiaries (nearly 40 percent of whom are female), from community development subprojects, increased revenues from parks, and jobs in conservation and tourism
- Two tourism concessions in the Bazaruto Archipelago National Park regularized

15. **The MozBio SoP is part of the World Bank's 'Integrated Landscape Management Portfolio' and delivers on the 'Maximizing Finance for Development' (MFD) approach.** The ILM portfolio includes the World Bank-financed projects implemented in a coordinated manner to maximize impact on (a) improved well-being of rural populations and (b) sustainable management of renewable natural resources (forestry, wildlife, fisheries, and land). A particularly relevant project to MozBio 2 is the 'Sustenta' (Agriculture and Natural Resources Management) Project (P149620), a US$40 million Investment Project Financing (IPF) project currently under implementation (2017–2021), which aims "to integrate rural households into sustainable agriculture and forest-based value chains in the Project Area." 'Sustenta' is currently implementing a matching grant scheme (MGS) that will be replicated through MozBio 2. MozBio 2 promotes MFD by promoting PPPs in CA management, private investment in tourism, capitalization of an Endowment Fund managed by a private foundation (BIOFUND), and promotion of small and medium enterprises (SMEs) through matching grants.

16. **MozBio 2 will target its interventions on CA landscapes.** These landscapes are made up of different land uses, with one or more CAs as a key type of land use, which in turn are heavily affected by different types of land uses around it (such as agriculture, mining, and livestock). Three landscapes have been selected based on the availability and readiness to engage in co-management (PPPs) agreements, since MozBio 2 seeks to leverage PPPs as an important strategy to ensure the financial sustainability of targeted CAs. Other landscapes may be selected during the implementation of the project, in common understanding between the GoM and the World Bank. The targeted landscapes are presented as follows and in the map in annex 2:

- **The Elephant Coast Landscape** includes two CAs (MSR and Ponta do Ouro Partial Marine Reserve [POPMR], including Inhaca Island) as well as the immediately adjacent land areas in the Matutuine District (including private and community areas). It is expected that MSR and POPMR, including Inhaca Island, will undergo a legal consolidation to become a single CA

[10] These results refer to the PDO-level indicators, as reported by the GoM in March 2018. All indicators (including intermediary ones) are on track to meet or exceed the end targets.

(The Elephant Coast CA). The landscape is part of the Maputaland Centre of Endemism and Biodiversity Hotspot and is well recognized for its high conservation value. MSR is home to a breeding population of elephants, the last large population of elephants in the Maputo Province. It is dominated by a coastal plain area, longitudinally crossed by the Maputo and Futi Rivers with important habitats associated with wetlands, in addition to marine and coastal habitat. Subsistence agriculture and fishing are the main sources of income for local communities. The landscape has high tourism potential (nature, wildlife, beach, and associated recreational activities), fostered by access to Maputo city, South Africa, and Eswatini, and boosted by a new road to be completed by 2018.

- **The Chimanimani Landscape** includes the CNR, its buffer zone, three forest reserves (Maronga, Moribane, and Zomba), and the adjacent land areas in the Sussundenga District. The landscape is part of the Chimanimani–Nyanga Center of Endemism. Its biodiversity richness comes from the perennial forest and the afromontane pastureland, habitat for many species, including endemic flora and fauna resulting from a unique combination of altitude, soils, rainfall, and fire, which is endemic to the area. The mountains have been inhabited for centuries, containing important historical sites such as stone age rock paintings and ruins dating back to the times of Great Zimbabwe in the 14th and 15th centuries. In 2010, the CNR management plan was developed, identifying opportunities, threats, and a management strategy. The recent (2014) upgrade of the Chimoio-Sussundenga Road to a tarmac road has strongly boosted the economic development of Sussudenga District, which resulted in the establishment of new large agriculture areas (mainly fruit trees) and livestock farming, including in the CNR buffer zone, which increases pressure in the CNR. Despite the high tourist potential, the new road has not yet led to tourism development, which was affected by the political and security instability (from 2012–2017) and is limited by the lack of tourism facilities. The main threats to the landscape include illegal gold mining with concomitant pollution and soil erosion, poaching, and logging as well as itinerant slash and burn agriculture (particularly in the high slopes) and land clearance from establishment and expansion of new settlement areas. Other agriculture, or mostly livestock production, are located just outside the buffer zone.

- **The Marromeu Complex Landscape** comprises most of the Ramsar's Wetland of International Importance in the south bank of the Zambezi Delta, including the Marromeu National Reserve, Coutadas 10, 11, and 14, and adjacent land areas in Marromeu, Cheringoma, and Muanza Districts. The landscape is part of the Zambezian Coastal Flooded Savanna ecoregion, a flat alluvial plain irrigated by the Zambezi River Delta. It includes a variety of habitats ranging from Zambezian Coastal Flooded Savanna, coastal dunes, grassland, freshwater swamps, dambos associated with miombo forest, mangroves, and seagrass beds. These habitats are of great importance for several avifauna species but also for populations of buffalo and antelope, among others. In the 1960s, the area's buffalo population was one of the largest in the world, although, during 1980s it declined sharply due to armed conflicts and slaughtering campaigns. In recent years, the buffalo population has been growing significantly. Coutadas (mainly Coutada 11) have been active for more than 20 years, establishing a protection area around the Marromeu National Reserve. Livelihoods are based on subsistence agriculture, complemented by extensive use of local resources to supplement diets and incomes and to fulfil basic needs. Along the coast, fishing

is practiced both by local fishermen (mainly for subsistence) and by others from other provinces or even Tanzania. The Sena Sugar Company is the main employer which draws in from 3,000 to 4,000 migrants at peak periods of the year. The area is prone to floods.

B.2 Other Cross-Cutting Issues: Climate Change and Gender

17. **Climate change represents an additional serious threat to Mozambique and its CAs.** The country's mean annual temperature has increased by 0.6°C between 1960 and 2006, and the proportion of intense rainfalls has increased by 2.6 percent per decade since mid-century. The interior of the country is prone to higher frequencies of drought and the coastal regions to floods. Temperatures are expected to increase by 1.4–3.7°C by 2060. Seasonal-level projections include decreased dry season rainfall (January–June) and increased wet season rainfall (July–September). Climate models indicate future proportion of heavy rainfall concentrated in fewer events. However, due to the unpredictable incidents of El Niño and La Niña, projections of future climate change are difficult to predict. Human health, agriculture and food security, biodiversity, freshwater, coastal zones, and infrastructure are the most vulnerable areas to climate change and the frequency of extreme weather incidents (droughts, floods, and tropical cyclones). The impact of climate change on infrastructure and amenities is also significantly affecting productive sectors such as NBT. CAs hold the potential of supporting ecosystems, biodiversity, and communities to cope with these challenges while also contributing to avoiding/reducing greenhouse gas (GHG) emissions and enhancing carbon stocks through investing in forest conservation, sustainable land management (SLM), and reforestation practices. An example of this is Gilé National Reserve, where the CA serves as a major barrier to deforestation. Deforestation in the surrounding area averaged 0.28 percent between 2005 and 2013 while it remained at a negligible 0.01 percent within the reserve during the same period.

18. **Gender.** Addressing gender differences in communities in and around CAs offers opportunities to improve the sustainable management of CAs and maximize overall livelihoods benefits. Poverty, low education and access to finance, and asset scarcity is high among rural women in Mozambique. Gender gaps in access to education show a gender parity ratio of 0.91 at primary and secondary level and 0.69 at the tertiary level (World Bank Group Country Partnership Framework [CPF] 2017-2021, Report number: 104733). As an example, illiteracy rate in the Marromeu Landscape is more than double for women in comparison to men (29 percent among men and 76 percent for women). Women's lower education and skills make it more difficult for them to find work in the formal sector and negatively affect their potential as entrepreneurs. In addition, rates of early childbearing are extremely high in Mozambique, which has the 5th highest rate of births to adolescents in the world (42 percent of women ages 15–19 years have had at least one birth). Many female adolescents in Mozambique drop out of school by age 10–12 years, often due to early marriage and/or pregnancy, which feeds the intergenerational cycle of poverty (World Bank CPF 2017).

19. As demonstrated by evaluations of community projects in CAs under Mozbio 1, women and young girls often bear the burden of ensuring livelihoods for their households while facing insufficient access, control, and decision making over the use of strategic natural resources (often due to cultural, educational, economic, and institutional barriers). As a way to address the gender gap of disproportional low access to educational facilities in remote CA areas, Mozbio 1 piloted the establishment of girls' clubs and environmental education campaigns in schools in CNR following a model created in Gorongosa National Park. The girls' clubs have demonstrated positive results in terms of improving reading, writing,

and numeracy skill as well as improving girls' self-esteem and developing communication skills. These kinds of initiatives that improve social skills and decision-making power over natural resource management can also further help improve sustainable management of CAs and maximize agricultural productivity, food security, and overall social benefits to communities.

C. Relevance to Higher Level Objectives

20. **The proposed project will contribute to Mozambique's 2017–2021 CPF (Report number: 104733-MZ),** which has an overarching goal of creating more inclusive growth through employment promotion and improving productivity and competitiveness in a sustainable manner. Under CPF Focus Area 1, Promoting Diversified Growth and Enhanced Productivity, it contributes to Objective 2: Integrated approach to increasing productivity in agriculture and forestry with a focus on smallholders and emerging commercial farmers. Agriculture, livestock, and forestry value chains in CA landscapes are key growth sectors with high employment potential in areas with highest rates of poverty. Under CPF Focus Areas 2, Investing in Human Capital, it contributes to Objective 5: Enhancing the Skills Base. Under CPF Focus Area 3, Enhancing Sustainability and Resilience, the project contributes to Objective 11: Improving Management of Climate Risk and Natural Resources by strengthening GoM capacity of managing the country's CAs while investing in climate-resilient measures in CAs. Natural ecosystems in CAs are effective natural buffers to floods, drought, and to climate change in general. By supporting the government in identifying and implementing gender-informed activities in biodiversity conservation and CA management, the project will also contribute to the IDA18 strategic theme for gender.

21. **The proposed project is also consistent with the upcoming GEF 7[11] Programming guidelines.** It contributes to the GEF's Biodiversity Focal Area, Objective 1: Mainstream biodiversity across sectors as well as landscapes and seascapes and Objective 2: Address direct drivers to protect habitats and species, in line with the 2020 Aichi Biodiversity targets under Strategic Goal A (Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society), Strategic Goal B (Reduce the direct pressures on biodiversity and promote sustainable use), and Strategic Goal D (Enhance the benefits to all from biodiversity and ecosystem services). The project also contributes to the Climate Change Focal Area, Objective 2: Demonstrate mitigation options with systemic impacts and to the Land Degradation Focal Area Objective 1: Support on the ground implementation of Sustainable Land Management (SLM) to achieve Land Degradation Neutrality (LDN). As designed, the project activities are aligned with the proposed GEF 7 Impact Program on dryland forests, by placing strong emphasis on the conservation and restoration of miombo dryland forests. The project will additionally pilot restoration activities within protected areas as part of an aggregated system of biodiversity offsets, further contributing to this objective. The GEF 7 System for Transparent Allocation of Resources (STAR) allocation for Mozambique are expected to be added as Additional Financing (AF) to this project as they become available in 2019. The AF will finance activities presented in this PAD (parent project) but not financed by IDA, namely: i) the capitalization of the BIOFUND Endowment Fund (Component 1); and ii) the promotion of land restoration activities in target landscapes, to halt the loss of critical habitats through sustainable land use practices (including conservation agriculture, agroforestry, and reforestation) (Component 3). Land restoration activities will be entered in the national registry to facilitate the financing of ecological

[11] GEF 7 Replenishment concluded on June 30, 2018, and funds will be made available by 2019. The GEF Focal point in Mozambique has confirmed the intent to use Mozambique's allocation once funds are made available. These resources will be processed as an AF to the MozBio 2 Project and further discussed with the GEF as GEF 7 becomes effective.

restoration activities by the private sector as a potential biodiversity offset asset. All GEF financing will be incremental and fully aligned with GEF strategic priorities.

Box 1.Globally Important Environmental Services through the GEF

MozBio Phase 2 project will be complemented by GEF 7 funds (expected in 2019). GEF funds would finance the incremental costs of achieving global benefits in terms of increased biodiversity protection, reduced land degradation, strengthened climate change resilience, and contribution to climate change mitigation. GEF resources from the biodiversity focal area are expected to be used to capitalize Mozambique's Endowment Fund for conservation, managed by BIOFUND (Component 1). The Endowment Fund is operational and performing well and has achieved some level of capitalization (US$26 million as of 2018) but still requires additional funding to cover the financial needs of the CAs system. GEF funds from the climate change and land degradation focal areas are expected to fund activities in the landscapes targeted by the project that reduce land degradation and protect important terrestrial habitats, including reducing deforestation (Component 3).

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

22. The Project Development Objective (PDO) is to improve management of target conservation area landscapes and enhance the living conditions of communities in and around these conservation areas.

PDO Level Indicators

23. The project performance towards the PDO will be measured through key outcome indicators (detailed below) as well as intermediate results indicators. Details of each indicator baseline and targets are provided in the Results Framework and in the indicators' description table.

- CAs with improved management effectiveness (number; annual)
  - (a) Elephant Coast CA (Maputo Special Reserve and Ponto do Ouro Partial Marine Reserve)
  - (b) Chimanimani National Reserve
  - (c) Marromeu Complex (including Marromeu Reserve and Coutadas 10, 11, and 14)
- Key species population maintenance and/or increase (Yes/No; annual)
  - (a) Elephant Coast (MSR and POPMR) (1. Elephant, 2. Reedbuck, 3. Serranidae family [reef fish])
  - (b) Chimanimani National Reserve (1. Apalis chirindensis [Passerine Bird], 2. Olea Chimanimani [Olive shrub])

(c) Marromeu Complex (1. Buffalo, 2. Sable)

- Target landscapes with positive variation in local communities' perception of CAs' impact in well-being (number; biennial)

B. Project Components

24. **MozBio 2 finances activities at the national and CA landscape levels, addressing the four pillars of the GoM's MozBio Program.** Component 1 has a national scope and focuses on strengthening the three key institutions promoting biodiversity conservation (ANAC, BIOFUND, and FNDS) and human resources for the entire CA system through the 'Conservation Leadership Program (CLP)' and facilitating NBT. This addresses MozBio Pillar 1: Policies, Legislation, and Institutions and Pillar 2: Financial Sustainability. Components 2 and 3 are implemented at the level of the target CA landscapes. Component 2 addresses MozBio Pillar 3: Biodiversity Conservation Management, focusing on activities within the CAs. Component 3 addresses Pillar 4: Community Development by promoting activities outside CAs, in the broader landscape.

25. **Component 1: Strengthening Capacity and Financial Sustainability of National Conservation Institutions (US$15 million equivalent from IDA).** This component will improve the capacity of the three main national conservation institutions (ANAC, BIOFUND, and FNDS); create a cohort of conservation professionals; increase financial sustainability of the CA system, and foster NBT at the national level. These activities will strengthen technical and institutional capacity at national level to conserve biodiversity. These activities contribute to two pillars of the MozBio Program: (a) ensuring an enabling policy and institutional environment (governance) and (b) ensuring financial sustainability for the CA system. Expected results include strengthened institutional capacity at ANAC, BIOFUND, and FNDS; increased availability of funds for conservation, including through NBT; and a cohort of conservation professionals trained and available to work for institutions in the CA system. Specific activities are described in the paragraphs below.

26. **Strengthening of ANAC**. The project will support ANAC to become a reference conservation institution in southern Africa, by strengthening its business development capacity to attract investments in support of conservation. The project will finance (a) establishment and functioning of a 'Business Unit' to identify, market, manage, and monitor PPPs for CA management (co-management) and to promote tourism concession within CAs, particularly new tourism concessions in the targeted CAs; (b) development and piloting of an electronic visa (e-visa) system to facilitate tourists' entry in the country through an online application process; (c) participation in national, regional, and international conservation meetings to guarantee exchange of knowledge with other partners and institutions; (d) technical assistance (TA) (firms and individual consultants) to draft regulations (such as for human resources and gender guidelines for CA management, among others); and (e) office equipment and operating costs (especially for utilities, stationeries, and travel to field among others). ANAC will also be supported through the CLP (paragraph 29 below).

27. **Strengthening of BIOFUND**. The project will strengthen BIOFUND's capacity to become an international reference on sustainable financing of CAs. The project will finance part of the salaries and operating costs of the BIOFUND secretariat, which will permit full use of the Endowment Fund for distribution to the operating costs of the CAs thus improving CA management. This will also allow for the

Endowment Fund to continue to build and foster future self-sustainability and studies to explore sources of sustainable financing for CAs and to secure such opportunities, including a funds mobilization strategy, assessing the real value of CAs for national and local economies, opportunities for payments of ecosystem services, and piloting a biodiversity offset initiative with the private sector.

28. **Strengthening of FNDS.** The project will support FNDS to strengthen its role of promoting sustainable rural development, including within the target CA landscapes, and to ensure proper fiduciary and safeguards management for this project. The project will finance (a) salaries of key project management staff (such as the coordinator, a protected area management officer [to oversee Component 2], value chains specialists [to oversee Component 3], community development specialists [to oversee community activities in Components 2 and 3], monitoring and evaluation [M&E] officers, safeguard officers, financial managers, accountants, and procurement officers [part of FNDS fiduciary support unit]); (b) operating costs at the national level for equipment maintenance, utilities, travel, communication, and subsistence on the field; and (c) vehicles, field, and office equipment.

29. **Promotion of the CLP.** The project will establish and maintain a CLP to promote a cohort of skilled professionals in biodiversity conservation who are expected to work for the different organizations in Mozambique's CA system. This will be promoted through (a) long- and short-term trainings delivered by national and international organizations and (b) professional experience in national and international conservation institutions. The program will teach a broad set of skills, including leadership (conservation management, planning, monitoring, financial management [FM]); science (ecology, botany, zoology, etc.); and climate change risks. The program will establish an internship program, grant scholarships, and promote an annual conference on biodiversity to raise awareness of conservation skills needs and offers in the country. Targeted beneficiaries are staff currently employed at key conservation institutions (ANAC, BIOFUND, and FNDS) and young Mozambicans engaged in conservation. Beneficiaries will be selected through a robust transparent and merit-based process (with at least 10 percent of staff beneficiaries being women and 50 percent of the broader public beneficiaries being women), led by ANAC and BIOFUND. The program will establish partnerships with international agencies, such as South Africa's Parks (SANParks) and the Brazilian Park's Agency (Chico Mendes Institute of Biodiversity Conservation (*Instituto Chico Mendes de Conservação da Biodiversidade*), and collaborate with regional training institutions, such as the Southern Africa Wildlife College (SAWC), Mweka Wildlife College, and others, and with domestic knowledge centers, particularly the Edward O. Wilson Laboratory in the Gorongosa National Park and other relevant academic partners.

30. **Component 2: Improving Conservation Areas Management in Target Landscapes (US$17 million equivalent from IDA).** This component will improve biodiversity conservation management of target CAs, particularly the governance of CAs (including its relationship with surrounding stakeholders), human resources management, infrastructure establishment and maintenance, human-wildlife coexistence, research, resources control and patrolling, and promoting of environmental awareness and strengthening of community-based organizations (CBOs) among local communities. Activities to be financed will be in line with the CA management plan. Biodiversity conservation management is a pillar of the MozBio Program, to which this component contributes directly. Expected results include significantly improved management effectiveness of the targeted CAs (an average increase of 20 percent in the Management Effectiveness Tracking Tool (METT) score across the targeted CAs), ensuring that key species populations are maintained or increased, among others.

31. **Enhancing CAs' human resources and fixed assets.** The project will support (a) human resources development, including salaries and training of key staff; (b) climate-smart and resilient infrastructure, including construction, repair, or maintenance of infrastructure mainly for management (headquarters, staff and rangers' housing, roads, drifts, fencing, and small works for the promotion of human-wildlife co-existence) and for tourism (access road, viewing structures, camp site, trails, and signage); (c) TA for development business and management plans; (d) equipment, including hardware and software (i.e. field equipment, tents, radios, repeaters); (e) research and surveys to improve park management, including on climate change risks to CA management, integrated wildlife and ecosystem management, and pilot a registry of ecosystem degradation and efforts of restoration to feed into the biodiversity offset system; and (f) translocation of wildlife[12]. These activities will be implemented by FNDS.

32. **Supporting CAs' operations.** The project will finance: (a) operational costs to strengthen CA governance, including the establishment and functioning of CA Management Councils; (b) resource protection including patrol costs (ration, fuel, bonus, etc.); (c) delivery of environmental awareness and education campaigns[13] through the use of cultural activities including local community radio programs (including family planning messages), support to girls' and environmental clubs, scholarships to local youth, and promotion of vocational training; (d) strengthening CBOs among local communities; (e) a pilot of payments for ecosystem services (PES) in MSR; and (f) small works to promote human-wildlife co-existence in selected CA landscapes. These activities will be implemented by BIOFUND.

33. Activities specific to the targeted CAs are as follows:

- **Elephant Coast Landscape (MSR and Ponta do Ouro Marine Reserve).** The project will finance the following:

  (a) **Related to human resources and fixed assets.** (i) staff salaries and training; (ii) infrastructure development, including a connection road to the park entrance/headquarters building and an all-weather game loop in its vicinity, construction of additional staff housing, and rehabilitation of a training center; (iii) equipment, including field equipment; and (iv) translocation of animals.

  (b) **Related to CAs' operations.** (i) supporting operational costs linked to the governance of the CA, including the establishment of its management council; (ii) enhancing environmental awareness, promotion of girls' clubs, provision of scholarships, community trainings, and campaigns including on family planning; (iii) support to CBOs; and (iv) operating costs, including fuel, rations, equipment maintenance; Peace Parks Foundation[14] (PPF) will act as the co-manager for these CAs through an agreement

[12] Translocation of animals entails the capture, transport, and release of wild animals (antelopes, particularly) from one area to another area, with the goal of increasing their population and repopulating areas where these animals once existed but have ceased to, due to various reasons including poaching and habitat disruptions. The practice follows strict guidelines set out by the International Union of Concerned Scientists (IUCN). There are no specific safeguards requirements, except to ensure that best international practices are followed.

[13] These Environmental Education Activities will be part of a quota of 20 percent of the Local Education Curriculum which schools already must comply with.

[14] PPF is a nonprofit organization that advocates for the creation of TFCAs in Africa, and provides services to these TFCAs such as political support-building, planning, project management, fundraising, and management training in various areas.

signed with the GoM.

- **Chimanimani Landscape (CNR).** The project will finance the following:

  (a) **Related to human resources and fixed assets.** (i) staff salaries and training; (ii) infrastructure construction and maintenance, including staff housing, camps, roads, drifts, trails, and signage; (iii) equipment, including field equipment; and (iv) translocation of animals.

  (b) **Related to CAs' operations.** (i) operational costs linked to the governance of the reserve, including the establishment of its Management Council; (ii) updating the management plan; (iii) enhancing environmental awareness, promotion of girls' clubs, provision of scholarships, community trainings and campaigns including on family planning; and (iv) operating costs, including fuel, rations, equipment maintenance. A partnership for the co-management of this CA will be pursued by ANAC.

- **Marromeu Complex Landscape (Marromeu Reserve and Coutadas 10, 11, 14).** The project will finance the following:

  (a) **Related to human resources and fixed assets.** (i) staff salaries and training; (ii) infrastructure construction and maintenance, including staff housing and office, water and electric access, and road improvement; (iii) equipment, including field equipment; and (iv) translocation of animals.

  (b) **Related to CAs' operations.** (i) operational costs linked to the governance of the reserve, including the establishment of its Management Council; (ii) updating the management plan; (iii) enhancing environmental awareness, promotion of girls' clubs, provision of scholarships, community trainings, and campaigns including on family planning; (iv) operating costs, including fuel, rations, equipment maintenance; and (v) research and survey work, including on estuarine and marine ecosystems, considering climate change impacts. A partnership for the co-management of this CA will be pursued by ANAC.

34. **Component 3: Promoting Conservation-compatible Rural Development and Integrated Landscape Management in Target Landscapes (US$13 million equivalent from IDA).** This component will promote conservation-compatible rural development in target landscapes through support to sustainable value chains and promote ILM, by financing land use planning, establishment of LMUs, and capacity strengthening of targeted districts to reduce pressure on CAs. These activities contribute to a pillar of the MozBio Program and require addressing several constraints, including limited access to credit, TA and inputs, and insufficient market access and employment opportunities. This can only be achieved through an integrated set of interventions across the landscape (ILM), including spatial planning, and restoration of degraded habitats (land, forests, mangroves, and so on). Conservation-compatible rural development aims to improve the livelihoods of communities living in these landscapes while also reducing pressure on CAs from surrounding communities and restoring degraded habitats. Expected results include an increase in the number of rural households and local communities connected to sustainable value chains, and restoration of degraded habitats. This component draws on the implementation tools of the ongoing

Sustenta Program, financed by the World Bank. Expected results include increased number of households included in sustainable value chains, in particular of women-headed households, rural population's financial literacy increased, local land use plans completed, and area of degraded habitats restored.

35. **The provision of Matching Grants.** The Project will finance a Matching Grants Scheme (MGS) that promotes conservation-compatible rural development through access to finance and TA (see annex 3) targeting local entrepreneurs; CBOs; and micro, small, and medium enterprises (MSMEs) to promote conservation-compatible value chains, including financial literacy of local communities through the establishment of Saving and Credit Groups (PCRs), which primarily comprise women, and represents one of the few working mechanisms that help women increase their financial credit and savings.

36. **The promotion of integrated landscape management.** The Project will promote ILM, particularly landscape zoning, restoration of degraded habitats, and reduction of habitat loss in the targeted landscapes. The project will finance (a) operational costs and consultancy to develop participatory and gender-sensitive land use zoning plans for the target landscapes, including consultation, mapping, fieldwork, and dissemination; (b) operational costs and equipment to establish LMUs and strengthen the capacity of districts in the targeted landscapes.

37. Activities specific to each landscape are mentioned below:

(a) **Elephant Coast Landscape.** The project will support (i) value chain activities, possibly including fisheries associations in the bay area of the marine reserve, NBT private or community/private joint ventures, sustainable wildlife management and cattle farming, conservation-compatible livestock schemes, crab farming, handcrafting, beekeeping and (ii) establishment of PCRs. A Special Land Use Plan for the landscape will be the base for the Elephant Coast Management Plan (currently under preparation).

(b) **Chimanimani Landscape.** Potential value chains to be promoted include (i) NBT private or community/private joint ventures, wildlife and cattle farming, forestry, including small-scale plantations; conservation agriculture—for example, macadamia, coffee, beekeeping, soy, maize, and sesame, which also provide opportunities for improved adaptive capacity to manage climate-related risks; and (ii) new PCRs will be formed. A detailed land use plan for the Sussudenga District will be conducted.[15]

(c) **Marromeu Complex Landscape**. Potential value chains to be promoted include (i) fisheries in the estuary and coastal area; private or community/private joint ventures in game farming; forestry, non-timber forest products; conservation agriculture—for example, cashew nuts, sugarcane, beekeeping, wildlife products; crab farming; (ii) new PCRs will be formed. A detailed land use plan for the Marromeu District will be conducted, which

[15] This land use plan will build on the 'restoration opportunities assessment' conducted in the Chimanimani Landscape, which aims to map degraded areas, identifying effective restoration models and prioritizing interventions. The methodology combines geospatial analysis, ground truthing and a consultative process, with strong participation of key land users and stakeholders within the landscape, such as the CNR administration, local government bodies, the Mozambique Electricity Company, academia, and the private sector, involved forest, agriculture, and mining value chains in the Chimanimani landscape. The assessment will be finalized by July 2018.

complements the already existing Zambezi Valley land use plan.

38. **The MGS will provide matching funds to local entrepreneurs; CBOs (cooperatives, associations, and natural resources committees, among others); SMEs; and individuals for revenue-generating businesses.** At least 30 percent of beneficiaries will be women and/or youth. Businesses to be supported have to be (a) conservation compatible; (b) consistent with the approved zoning for the landscape; and (c) economically viable. Types of businesses to be promoted include value chains based on wildlife products, such as buffalos and crocodile farming, on forest products (timber and non-timber forest products), NBT, agriculture, and livestock. The project will provide assistance for the identification, preparation, and implementation of the business plans. MGS will follow the procedures currently implemented by the Sustenta project (P149620).[16] Details in annex 3.

39. **Contribution to climate change.** As described in the components above, the project will enable CAs to play a crucial role in improving resilience and enhancing adaptive capacity of local communities, by promoting climate-smart approaches in the different landscapes, ensuring infrastructure is developed to climate-resilient standards, and building measures to address climate risks. Adaptation co-benefits include the following:

- Diversifying livestock and crops through the promotion of conservation agriculture and monitoring and control of pests and diseases will help increase crop yields, improve soil structure, and reduce soil erosion as well as loss of nutrients. Improved access to finance for communities to develop conservation-compatible value chains helps build their natural assets and reduces their vulnerability to climate and non-climate risks. Although certain climate risks will persist, such as drought and floods, these interventions contribute to managing long-term negative impacts of climate hazards. For example, access to credit can help community farmers buy inputs (seeds, fertilizers, etc.) that increase agricultural productivity, replace climate-sensitive crops with drought-resistant or short-cycled varieties, build infrastructure to collect rainwater, and invest in small-scale irrigation schemes. The project will also support smallholder capacity building to manage and cope with climate risks.

- SLM, agroforestry, and restoration activities (including reforestation and assisted natural regeneration) will help reduce social vulnerability to climate hazards, enhancing their coping mechanism; improve food security; and diversify their livelihood options. Protecting soils from erosion increases soil organic matter and regulates water for more resilient production systems. Agroforestry systems will also help generate side incomes or secure food supply (if the main crop production has been damaged due to extreme weather events). For reforestation practices, the project will make use of native species and natural regeneration

[16] The MGS is a mechanism that aims at enabling value chains to be more inclusive an efficient, by improving the productivity of small emerging commercial farmers (PACEs) and MSMEs in agricultural and forestry-based value chains. Specifically, the MGS aims to strengthen the ability of small holders, PACEs, and MSMEs to participate in the commercial banking sector, as well as improve producer access to information, technology, practices, and inputs. Sustenta MGS supports two types of trade links: (a) smallholders to agribusiness value chains through investments by PACEs and (b) support for MSMEs in expanding key agribusiness and forestry value chains. This is done through two financing windows: (a) Window 1: designed for business plans between US$5,000 and US$100,000, with 50 percent donation and 50 percent personal contribution; and (b) Window 2: designed for business plans between US$100,001 and US$1,000,000, with the same rules of Window 1.

involving the communities as much as possible.

- Coastal resilience through reforestation/restoration of mangroves will help reduce storm surges, erosion, and tidal floods; provide protection of wildlife habitat; and benefit coastal communities including the fisheries sector. The project will also support capacity building of fisheries communities to manage climate risks.

40. **The project will also mitigate climate change by contributing to the loss of carbon-rich habitats** (particularly deforestation of miombo forests and mangroves). The project will address the causes of deforestation (such as slash and burn agriculture) and enhance the effectiveness of CA management, which reduces GHG emissions. It will also enhance carbon stocks through SLM, land restoration, and reforestation. The project will contribute to a protection of around 1 million ha among the three different CAs. In total, the project will help generate net emissions reductions of 11 million tons CO_2eq over a period of 20 years. For more information on the GHG assessment, please see annex 5.

C. Project Beneficiaries

41. **The project will have positive social and environmental benefits at local, national, and global levels.** At the local level, the project will directly benefit local communities living in the target landscapes, often among the poorest of the population, through the promotion of conservation-compatible rural development. The benefits to communities may include (a) income from NBT and wildlife utilization revenues that is returned to communities (20 percent benefit sharing policy); (b) increased economic benefits from conservation-compatible activities, including value chain integration; (c) job creation in the NBT and conservation sectors; (d) trainings and skills development linked to financial literacy; (e) improved institutional capacity building; and (f) improved decision-making power in the use of natural resources and CA management from participatory zoning. Certain interventions aimed toward young girls and women in these CAs will also generate specific gender-differentiated benefits, including increased engagement of women and young girls in management of natural resources and in income-generating livelihood activities. It is estimated that about 9,500 households (around 50,000 people) will benefit directly from the project. In addition, a critical indirect benefit to communities will be the value derived from increased quality of the natural resource base, such as clean water, and better access to markets.

42. **The project will also have a significant number of institutional beneficiaries**, including ANAC staff at both headquarters and at the decentralized level, BIOFUND, FNDS, CA co-managers, and CBOs, whose capacity will be strengthened through capacity-building activities. Importantly, the project will lead the development of a new generation of conservation leaders, through scholarships and knowledge exchanges dedicated especially to the youth and women. The GoM will also benefit significantly from a stronger institutional framework, improved regulations and management of CAs, the identification of alternative sources of sustainable financing, and tax revenues from increased NBT activities in the targeted landscapes.

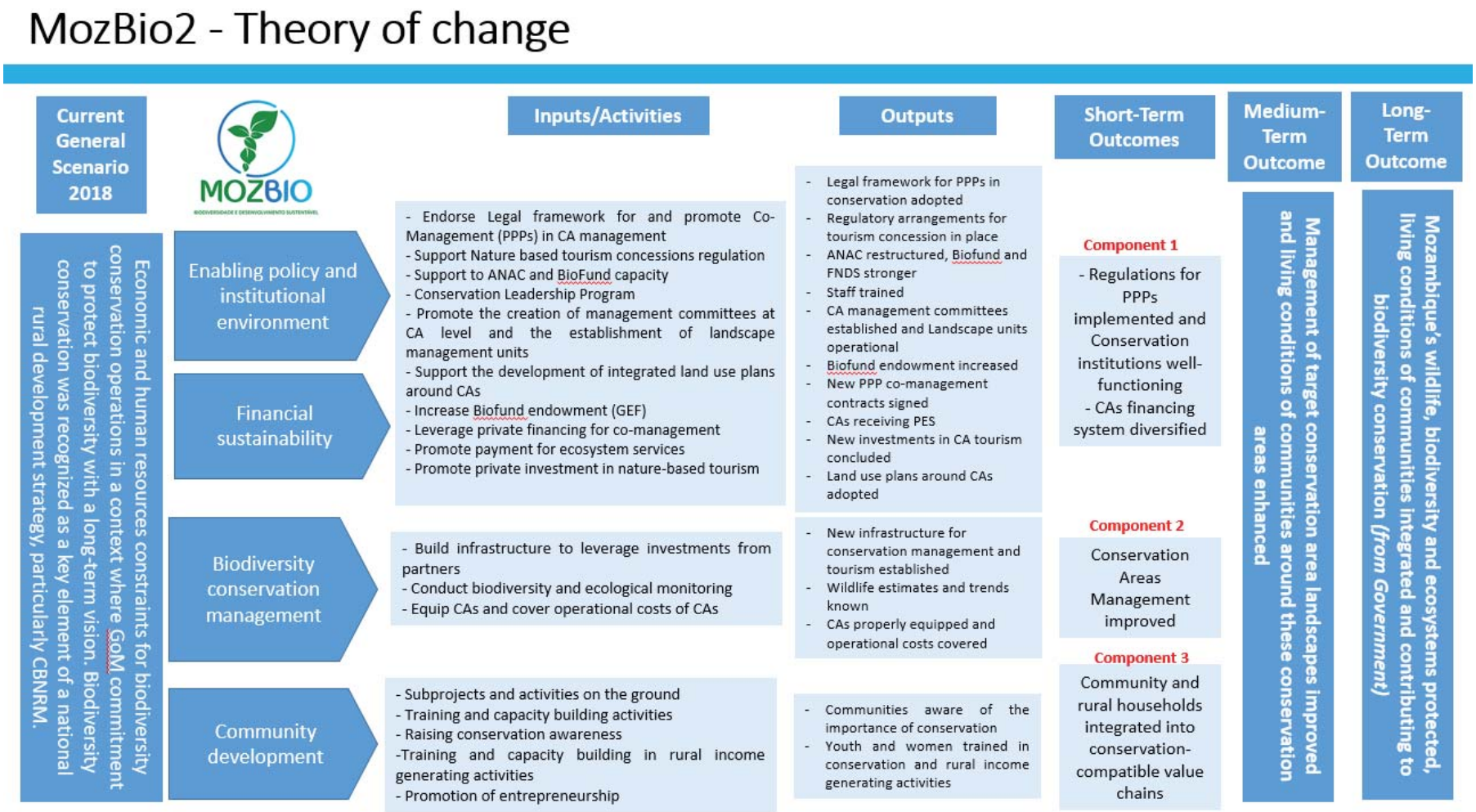
43. **Protecting large areas of land in Mozambique will also generate globally relevant environmental positive spillovers**, both in terms of protecting terrestrial and marine biodiversity, and mitigating GHG emissions, due to CAs' role in protecting forests and other carbon-rich habitats (such as wetlands and mangroves) from deforestation and degradation. Neighboring countries, including South Africa, Zimbabwe, Zambia, Malawi, and Tanzania will also derive environmental benefit from an enhanced

management of CAs that support valuable mammal species and fisheries common to all these countries. Finally, the project will aim at reducing deforestation and forest degradation, consequently contributing to the protection of water quality and flow, as well as local climate patterns which all depend on natural forests and woodlands.

D. Results Chain

44. **Figure 1 provides a visual depiction of the theory of change behind the operation**, explaining the causal link between activities, outputs, short-term outcomes, medium-term outcomes, and longer-term outcomes also identified as 'aimed scenario'—expected to occur beyond project closure. MozBio 2 theory of change is built on the basis of the current scenario (2018), which clarifies the main challenges to be tackled and then explains how the project plans to address them to achieve its objectives, organizing activities and outputs by the MozBio Program's main four pillars. The theory of change is not influenced by GEF funds availability, and it will be updated once GEF AF will be available.

Figure 1. Theory of Change



E. Rationale for World Bank Involvement and Role of Partners

45. **For nearly 30 years, the World Bank has been a major player in biodiversity conservation and remains one of the world's largest financers of biodiversity conservation**, which contribute to the goals of the Convention on Biological Diversity, and the United Nations Framework Convention on Climate Change (UNFCCC). The World Bank Group provides added value through (a) client focus, scale, and long-term engagement; (b) financial leverage and convening power; (c) economy-wide engagement; (d) public and private sector engagement; experience; and (e) global knowledge.

46. **The World Bank experience, scale, focus, and convening role within the donor community leverages finance across sectors and actors**, as well as helps mainstream biodiversity within national agendas such as the green growth agenda. The World Bank also provides technical and economic knowledge and expertise on the themes relevant to the project, such as biodiversity conservation, climate change, law enforcement and governance, wildlife crime, natural resources management, and public policies.

47. **Country eligibility for GEF co-financing.** GEF financing will provide Mozambique with critical support in addressing some of the key issues targeted by the biodiversity, climate change, and land degradation focal areas focal areas of the GEF, such as mainstreaming biodiversity and addressing direct drivers to protect habitats and species; demonstrating mitigation options with systematic impacts; and supporting implementation of SLM to achieve LDN.

F. Lessons Learned and Reflected in the Project Design

48. The MozBio 2 Project design integrates lessons learned from the ongoing MozBio 1 and the completed TFCA Program and from experience of previous interventions in CAs in Mozambique. Key lessons include the following:

(a) **Institutional strengthening - twin ANAC and FNDS.** Given its public administration status, ANAC has performed relatively well on issues related to strategy, policy and legislation, and coordination of law enforcement. It has performed less well on operational issues and business development. MITADER recognized this early in implementation of MozBio 1 and transferred project operation responsibility to FNDS, which improved implementation significantly. The lesson is that it is risky to overburden a new public entity with large projects until it has proven adequate capacity and performance. In this context, segregating project management operations from critical ANAC functions has proven successful, which will be continued in MozBio 2.

(b) **BIOFUND.** The gradual improvement of BIOFUND's performance has increased its relevance and the confidence of both its financiers and recipients. The endowment has now reached US$24 million (with additional funds already committed), and the CA operating costs provided by financiers (including the World Bank) are being channeled through BIOFUND. This approach will be continued and gradually increased to support all CAs, especially those not yet operating under co-management or receiving operating cost by other financiers. MozBio 2 will also continue financing the operational costs of BIOFUND, so that the

Endowment Fund revenue is fully used for CA management.

(c) **Co-management of CAs.** Despite difficulties at ANAC at the national level, the administration's facilitation of CA co-management partnerships has led to the substantial development of all CAs under co-management agreements. The lesson for the GoM is that such partnerships can be scaled up successfully concomitantly (instead of sequentially) while the public institution develops its own capacity to administer and oversee the sector. Going forward, MITADER will seek to scale up and increase the number of co-management agreements and the regulatory authority of ANAC to oversee these co-management agreements.

(d) **Livelihood around CAs.** The current approach to livelihood support around CAs has significantly surpassed its initial targets in terms of number of beneficiaries, however it is not sufficiently efficient due to high costs of service providers, and it is disconnected from the desired conservation-compatible impact in CA landscapes. In addition, the approach has not been applied at a sufficient scale to establish an incentive framework for reversing current patterns of settlement and unsustainable resource use to a meaningful extent. MITADER will implement the '*Sustenta Biodiversidade*' approach in the target CA landscapes, through an MGS to promote feasible conservation-compatible activities while promoting restoration of degraded areas in the broader landscapes. The MGS will be managed by FNDS, given its capacity to effectively promote value chain development, drawing on ongoing experience through other World Bank-financed projects.

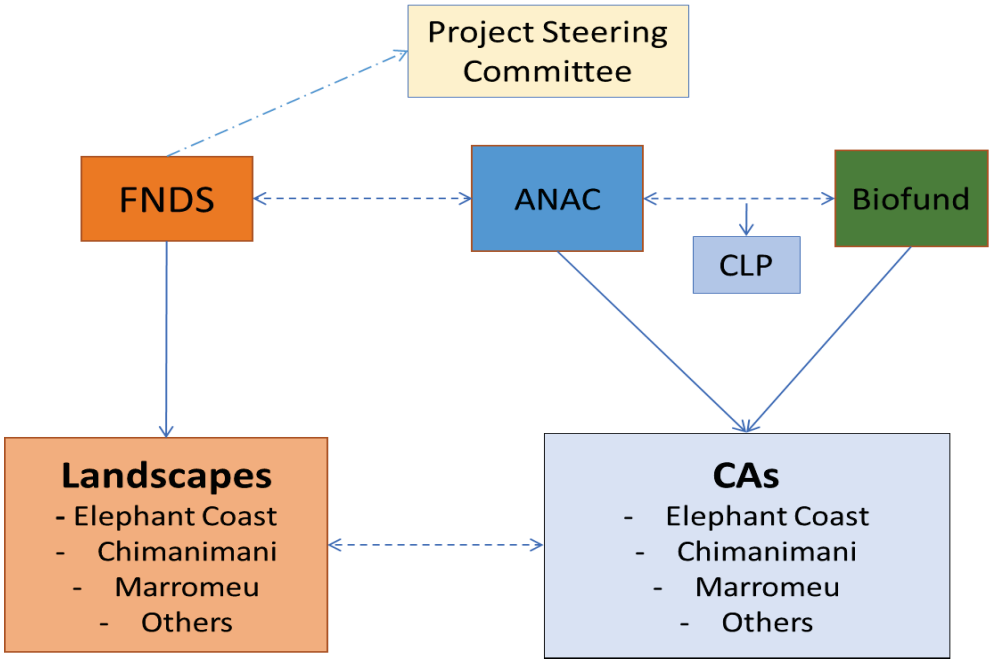
49. **Gender dimensions of CA management.** While MozBio 1 promoted a high number of female beneficiaries through the promotion of income-generating activities, it did not effectively improve women and girls' power in decision making and use of natural resources, hence not contributing to a transformational change and reversing of gender roles. Initial evaluation of subprojects demonstrates that women were, for example, mainly included in their traditional activities, (that is, small-scale conservation agriculture) and has only limited engagement in activities traditionally dominated by men, such as medium-scale agriculture and commercialization, rangers, tour guides, and CA staff. MozBio 2 will therefore ramp up its gender-sensitive support to help develop more effective interventions that can have profound results. Support to environmental clubs for young women and girls and to PCRs are some of the main strategies for MozBio 2 to address the limited engagement of women in the decision-making over natural resources. The experience of girls' clubs under MozBio 1 and in Gorongosa National Park has showed that these clubs offer forums to develop young girls' reading and writing ability, their knowledge in sexual reproductive health, ecological consciousness, civic education, life skills, and academic opportunities. The program also addresses child marriage, early pregnancy, and gender issues by involving and training parents, community leaders, school teachers, men, and boys to change behaviours. By supporting capacity of PCRs, the project aims to address the gap between women and men in access to financial savings and credit. Engaging women in value chain development and in the MGS will be more challenging and therefore, the MGS will be evaluated from a gender perspective and adjusted to include aspects that are more conducive to including women. Strengthening capacity at FNDS in relation to gender is also a strategy to increase MozBio's capacity to deliver positive results.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

50. **The project will be managed by a Project Implementation Unit (PIU) within the National Sustainable Development Fund (FNDS), supported by LMUs at the landscape level.** Please refer to figure 2. MITADER, through FNDS, will be the coordinating institution for the project. FNDS will have the overall responsibility for project management (including preparation of annual work plans), procurement and FM, safeguards compliance, and M&E (including the preparation of quarterly and annual implementation progress reports). The project will be managed by FNDS' Project Management Unit, which is currently managing several other World Bank-financed projects. Key positions at FNDS for the management of MozBio 2 include a project coordinator, a CA management specialist, community specialist, and a value chain specialist who will support and supervise the technical implementation of activities led by other institutions (for example, ANAC, BIOFUND, and CA co-managers). FNDS will enter a Memorandum of Understanding with the Ministry of Interior for the implementation of activities related to the e-visa pilot (Component 1). The project will adopt a Project Implementation Manual (PIM) that details the institutional, fiduciary, and implementation arrangements. A final version of the PIM acceptable to the World Bank will be a condition for effectiveness of the IDA Grant.

Figure 2. Implementation Arrangements

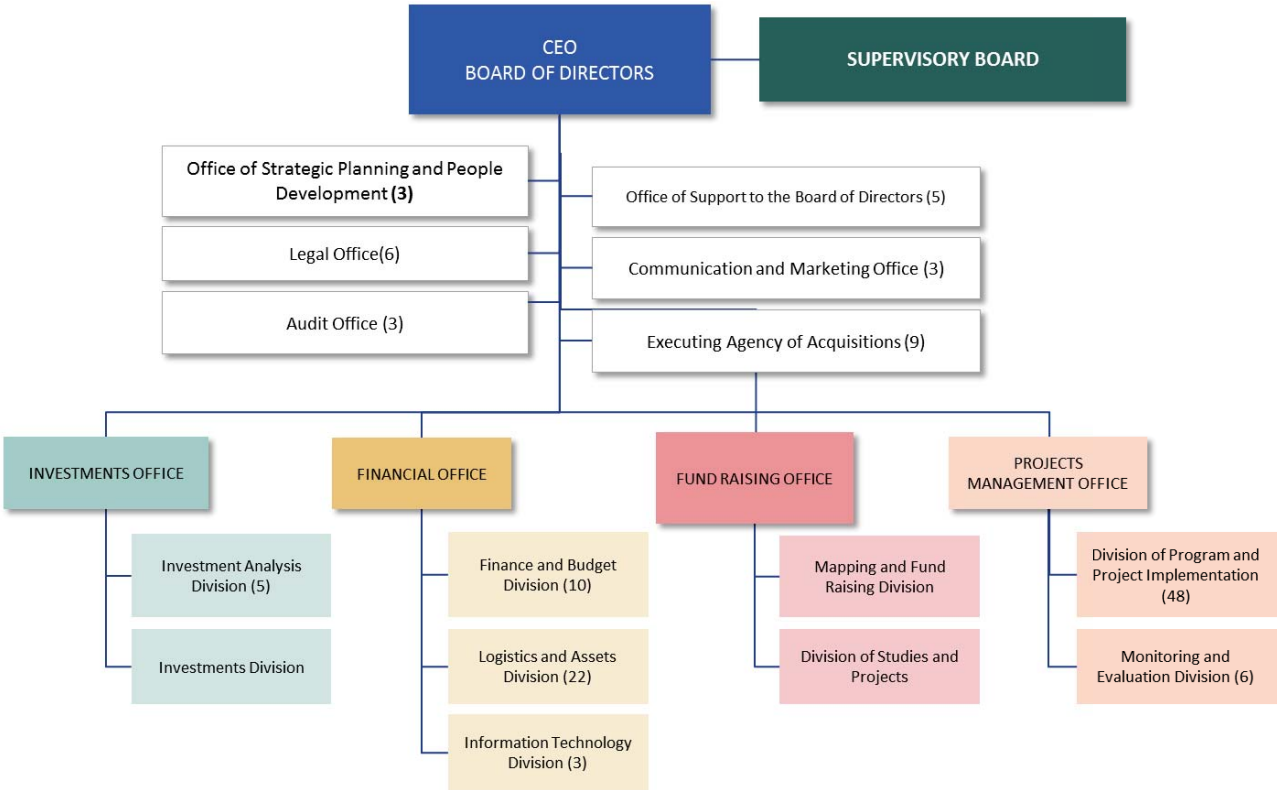


51. **LMU.** MozBio 2 will finance the establishment of LMUs in target landscapes, which will coordinate project implementation activities in their respective landscapes. They will be staffed will a project coordinator and three specialists (fiduciary, safeguards, and value chain). They will coordinate their activities with provincial authorities, particularly the Provincial Directorate of Rural Development, and District authorities, particularly the Economic Activities Services (*Serviço Districtal de Actividade Econômica*, SDAE).

52. **A Project Steering Committee (PSC)** will be established and functional during project implementation. It will be chaired by the Chief Executive Officer (CEO) of FNDS and comprise representatives from ANAC; MITADER; the Ministry of Culture and Tourism; the Ministry of Agriculture and Food Security; the Ministry of Seas, Interior Waters, and Fisheries; BIOFUND; the private sector; and civil society organizations.

53. **ANAC.** ANAC will implement a PPP Unit to promote private investments in CAs and will collaborate with BIOFUND in the implementation of the Conservation Leadership Monitor. ANAC will ensure the timely preparation of annual work plans for the target CAs and will monitor and report on their implementation.

Figure 3. FNDS organizational structure.



54. **BIOFUND.**[17] Under MozBio 2, BIOFUND will (a) disburse project funds to target CAs to cover their operational costs; (b) manage and distribute an additional contribution to the endowment fund (from GEF 7); (c) lead and manage the implementation of the CLP; and (d) explore sources of sustainable financing and secure such opportunities. BIOFUND will have FM and procurement responsibility assigned to them for the execution of these activities.

55. **The CLP.** A CLP Unit will be set up within BIOFUND, led by a program coordinator, in charge of day-to-day management of the program, including procurement, fund-raising, partnerships,

[17] A Subsidiary Agreement between the Ministry of Economy and Finance and BIOFUND was prepared and signed for MozBio 1. This agreement will be updated for MozBio 2 and will be a condition of project effectiveness.

communication, and M&E. A CLP Advisory Board will be set up to provide strategic guidance to the program and will be made up of ANAC, BIOFUND, co-management partners, and academia.

B. Results Monitoring and Evaluation Arrangements

56. The M&E function focuses on data collection and reporting on key performance input, output, and outcome indicators, including targeted data collection, surveys, participatory assessments, and midterm and end-of-project evaluations.

57. **Data and information needs.** Based on the lessons learned from MozBio1, the Results Framework of MozBio 2 will improve the M&E system by sourcing new data and as presented in the following paragraphs. It will be integrated in FNDS and count on the support of other institutions.

58. **Roles and responsibilities in M&E.** The FNDS M&E team will have the support of BIOFUND, ANAC, and CAs' staff to monitor and evaluate project indicators' results during its implementation. The FNDS M&E team will count on at least one M&E specialist, fully dedicated to the project, that will coordinate the development of an M&E Manual with all detailed data collection process, responsibilities, schedule of activities, and the budget needed.

59. **M&E capacity.** M&E operationalization will be supported by consultants, and synergies with the broader FNDS M&E Unit will be sought. Capacity-building activities (training sections, workshops, and courses) will be provided for the team as needed. Quality will be evaluated by the FNDS M&E team and results will be presented and discussed in World Bank missions.

60. **Data collection** process will vary from simple review of official records and registries obtained after field visits to satellite data and surveys planned to be implemented (see Results Framework for details). The Social Assessment for Protected Areas (SAPA) will entail a survey, combining (a) community workshops to identify significant CAs social impacts, (b) a short household survey, and (c) a stakeholder workshop to validate the survey results. The SAPA methodology will be used to assess CAs' positive and negative impacts on the well-being of communities living within and around them.

61. **Communication and information use.** All data will be used to publish reports on project performance and achievements. It is also expected that the information generated will contribute for management decision on projects activities and priorities definitions. Communications will also be used as a key tool for the promotion of community-based activities diversifying methods to reach more members of the population including reporting on success stories and lessons learned.

C. Sustainability

62. The project is designed with the overarching objective of ensuring sustainability of Mozambique's rich natural resources. The network of CAs covers over 180,800 km^2, about 23 percent of the country's land total surface. Many of the communities around them are in remote areas, poorly connected to the rest of the country, and with limited alternatives for moving out of poverty. The MozBio Program, and more specifically MozBio 2, aims to address these issues through four main pillars of sustainability while

also leveraging strong government commitment led by MITADER, as mentioned in other sections of the PAD. The four pillars are institutional, environmental, social, and financial sustainability.

- **Institutional sustainability** will be achieved by supporting ANAC, FNDS, and BIOFUND gradual evolution of functions, as well as their complementarity. The efficiency of the three institutions and their ability to work interdependently will be key for a sustainable governance of the sector. In addition to 'traditional' TA, the project will establish a culture of teamwork and performance to improve overall management capacity. The LMUs will also ensure a pool of capacity is built at the local level. Most importantly, MozBio 2 will finance the setup of an innovative CLP, building capacity of current professionals at the CA system and attracting qualified young conservationists to work in the conservation system and training them to gain and retain leadership and management skills. The CLP will also provide diversity training opportunities and enhance local expertise while also generating awareness and interest in biodiversity conservation as a successful and attractive career path, a behavior change that would persist beyond the project lifespan.

- **Environmental sustainability** will be attained by ensuring adequate capacity to manage sustainably the natural resources and wildlife at the level of CA landscapes, as well as by reducing anthropogenic pressures on CA resources. This will be the focus of Component 2. Environmental sustainability would also be achieved through the replication of successful experiences of co-management arrangements, piloted through the project in the three target CAs. The piloting of a national system for ensuring no net loss of biodiversity from economic development will also be a major step forward for environmental sustainability of the country.

- **Social sustainability** will be a key element of the project through Component 3. Through the component, the project will support the generation of alternative livelihood schemes for communities in CA landscapes, including NBT value chains development, also supported through Component 2. The vital common element of such schemes will be their compatibility with conservation needs to generate a virtuous cycle to self-sustain beyond project closure. By providing specific attention to women and youth, the project will deliver more effective and widespread community benefits that can spur trickle-up effects in the targeted landscapes.

- **Financial sustainability.** Currently, CAs are heavily dependent on donor funding; therefore, a key element of MozBio 2 project design is to establish self-sustaining mechanisms to contribute to financial sustainability. This will be done by supporting the gradual increase in BIOFUND capital and capacity, through the growth of its Endowment Fund; the consolidating of its disbursement mechanisms to the parks; and the systematic exploration of innovative financing mechanisms. In addition, the project will help target CAs enter successful co-management agreements with the private sector, NGOs, and other independent entities to pool financing, support effective CA governance, and reduce dependency on donor funding by enabling a graduation to a self-sustaining management.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis

63. **The economic analysis (annex 4) compares the economic benefits generated to the costs of the proposed MozBio 2 Project**, which aims to improve management of targeted CA landscapes and enhance the living conditions of communities in these areas. This ex ante economic analysis focused on three readily quantifiable benefit and cost streams to assess project feasibility:

- **Tourism benefits** include increased arrivals and associated spending.
- **Community livelihoods and resilience benefits** include income improvement for 9,500 households, or about 50,000 people. Households benefits in the form of increased income, employment, and skills from interventions on climate-friendly rural development activities, climate-smart agriculture, and links to sustainable value chains.
- **Ecosystem service benefits** include both quantifiable and less tangible benefits. Reducing GHG emissions through enhancing soil carbon stocks, SLM, CSA, land restoration, and reforestation is one of the most readily quantified ecosystem services.

64. **Model and assumptions.** A spreadsheet model was developed to compare the stream of benefits and costs under various scenarios using net present value (NPV) analysis, which discounts all monetary streams to a common base year. The economic analysis focused on the generation of benefits and costs over the life of the project and (separately) for a total period of 20 years. The analysis was conducted for a range of social discount rates from low values (that tend to place more weight on distant future benefits) to higher values (that place more weight on the near-term costs).

65. **The project costs** as outlined in the disbursement table of the PAD Datasheet, are straightforward. Tourism benefits are quantified primarily on arrivals information, average spending, and average stay length. Livelihoods benefits are compared based on current rural household incomes, which are less than the national average (World Bank World Development Indicator 2016) or about US$375 per capita per year. A key environmental service benefit is the value of emission reductions, which is estimated based on a per hectare level of carbon sequestration in local area soils and forests, the expected improvement relative to the baseline, and an estimate of the social value of avoiding emissions.

66. **To value the social/global/economic benefits of reducing carbon emissions**, the World Bank guidance on the shadow price/social value of carbon was followed.[18] The recommended valuation ranges from US$40 to US$80 per ton of CO_2eq in 2020—which is substantially above market but reflects the value from the long-term view of stabilizing the climate and preventing potentially disastrous outcomes. These values ('shadow prices') are designed to reflect the negative implications of GHG emissions for the global climate and economy. This is not an optimistic price path but instead reflects the expected level of future damages/costs of climate change due to continued GHG emissions. In other words, the shadow price

[18] http://pubdocs.worldbank.org/en/911381516303509498/2017-Shadow-Price-of-Carbon-Guidance-Note-FINAL-CLEARED.pdf.

reflects what society should be willing to pay (per ton of CO_2) to prevent/avoid the future costs that will be imposed by climate change.

67. **Analytical results and sensitivity analysis.** This ex ante economic analysis demonstrates positive benefit-cost results across a range of sensitivity analyses and assumptions (see table in annex 4). The positive results were robust to variations in the estimated impact or performance of the project interventions, discount rates, and carbon prices. The results of several simulated scenarios (combinations of key assumptions) of project benefits and costs are summarized in table 2, which compares the NPV of both costs and benefits for each benefit stream under a range of carbon prices and discount rates and for the life of project and for a 20-year time horizon. These quantitative assessments help demonstrate that the project produces substantially positive net benefits under a wide range of reasonable price and performance scenarios.

- Tourism benefits are quantified primarily based on 'arrivals' information, average spending, and average stay length. Assuming a modest 5 percent increase in overall tourist spending, through the combined effect of increased arrivals, increased spending (currently US$235/day), and increased stay (currently 2–4 days), the present value of incremental tourism revenues during the project life ranges from US$6.4 million to US$9.6 million with discount rates from 15 percent to 3 percent. Over a 20-year horizon, these benefits would be 50 percent to 100 percent higher.

- A 10 percent increase in livelihood benefits (household earnings from TA, training, improved practices, and access to markets for 8,000 beneficiary households) would represent an NPV benefit stream of US$6.9 million to US$10.3 million over the project life and US$10.3 million to US$24.5 million over 20 years (with the same discount rate assumptions. This did not include any spillover or multiplier benefits nor any reinvestment or growth beyond the 10 percent increment. Opportunity costs are assumed to be covered in the concept of a 10 percent increase in net earnings.

- Emission reduction benefits are estimated based on annex 5, which calculates a savings of 550,000 emission reduction tons per year if deforestation can be reduced by 30 percent from the existing rate of deforestation (not the level). Reductions of the deforestation rate as low as 7.5 percent and 15 percent were also analyzed to ensure that the assumptions are conservative and achievable. Though carbon benefits dominate the results, they are only a third to a half of the total, depending on the combination of assumptions. For the base set of assumptions and a 6.0 percent discount rate, the project breaks even at a carbon value of US$8–US$12 over the life of project, yielding benefits of US$9 million to US$24 million, even when the deforestation reduction is 15 percent or 7.5 percent. The breakeven carbon price that would cause the benefits to just equal the costs was also checked. If the carbon value price were even as low as US$5.5 per ton, then the project would still break even when tourism benefits increase by 8 percent instead of only 5 percent.

Table 2. Project NPV of Costs and Benefits by Benefit Stream, for Project Life and in 20 Years

MOZAMBIQUE CONSERVATION AREAS FOR BIODIVERSITY AND DEVELOPMENT - PHASE 2					
Economic Analysis - Results of Scenarios and Sensitivity Assumptions					
	NPV (Project life)				
Discount Rate	6%	6%	6%	15%	3%
Carbon Price Discount	40%	40%	22%	22%	22%
Deforestation reduction, relative to 30%	25%	50%	50%	50%	50%
Expected Costs - Disbursements	($31.19)	($31.19)	($31.19)	($22.28)	($35.23)
TOTAL ESTIMATED BENEFITS	**31.30**	**42.77**	**31.55**	**23.44**	**35.25**
A. TOURISM plus REVENUES	$8.63	$8.63	$8.63	$6.43	$9.63
B. COMMUNITY LIVELIHOODS & RESILIENCE BENEFITS	$9.21	$9.21	$9.21	$6.86	$10.28
C. ECOSYSTEM SERVICE BENEFITS	$13.33	$24.69	$13.58	$10.05	$15.20
BENEFIT COST RATIO	**1.00**	**1.37**	**1.01**	**1.05**	**1.00**
	NPV (Over 20 Years)				
Expected Costs - Disbursements	($32.28)	($32.28)	($32.28)	($24.85)	($35.51)
TOTAL ESTIMATED BENEFITS	**67.24**	**93.30**	**67.81**	**36.45**	**88.44**
A. TOURISM plus REVENUES	$17.72	$17.72	$17.72	$9.67	$22.99
B. COMMUNITY LIVELIHOODS & RESILIENCE BENEFITS	$18.93	$18.93	$18.93	$10.33	$24.55
C. ECOSYSTEM SERVICE BENEFITS	$30.29	$56.10	$30.85	$16.29	$40.50
BENEFIT COST RATIO	**2.08**	**2.89**	**2.10**	**1.47**	**2.49**

68. **This ex ante economic analysis demonstrates positive benefit-cost results across a range of sensitivity analyses and assumptions** (see table 2). The positive results were robust to variations in the estimated impact or performance of the project interventions, discount rates, and carbon prices. The sensitivity analysis is designed to show that the positive economic result is not dependent on a high price of carbon but is in fact robust to changes in carbon prices, interest rates, and productivity/performance assumptions.

69. **Qualitative benefits.** Beyond the readily quantified benefit streams included in this analysis, a wider range of additional benefits can be expected, including local and downstream environmental service benefits (for example, water retention and quality, tree cover, shade and pollination, and so on) and habitat and biodiversity conservation. Livelihood benefits and investments in productivity that arrive after the project implementation period were only quantified up to 20 years, even though it is likely that the target areas and communities will continue to generate positive incremental changes compared to the 'without-project' situation. While this approach systematically undervalues project benefits, it underscores the robustness of the quantitative analysis of benefits, considering that any additional unvalued benefits would only add to the positive evaluation of the project.

B. Fiduciary

70. Despite shortcomings in the country's PFM, both implementing agencies have experience in handling FM matters of World Bank-financed projects as they are currently implementing ongoing projects. The Borrower should implement the proposed FM action plan satisfactorily, to ensure that the project FM arrangements are adequately in place. The FNDS Procurement Unit, comprising eight procurement practitioners including procurement specialists and procurement assistants, will use the World Bank's New Procurement Framework (NPF). All staff have experience in procurement and have

been trained on the NPF; however, they do not have experience with it yet. The unit is well equipped with office space and all the means to perform the work satisfactorily. There is a need for improvement in the preparation of the bidding documents, the period for preparation and submission of the bids, and the record keeping system. Paragraph 75 of this PAD will present the proposed mitigating measures.

(i) Financial Management

71. An FM assessment was carried out in June 2018, in accordance with the World Bank's Policy and Directive for IPF and World Bank guidance on FM in World Bank IPF Operations issued on February 28, 2017. The overall conclusion of this assessment is that the proposed project's FM arrangements are considered adequate and satisfy the World Bank's minimum FM requirements under the World Bank's Policy and Directive for IPF.

72. FNDS and BioFund will have overall fiduciary responsibilities for project implementation. For both implementation entities, the finance teams handling the ongoing operations will also have overall FM responsibilities for the proposed project. Project funds, expenditures, and resources implemented through FNDS will be accounted for through the government integrated FM information system (*Plataforma electrónica do Sistema de Administração Financeira do Estado,* e-SISTAFE) and complemented by the existing automated accounting software in use by the ongoing project (MozBio 1). The basis of accounting will be financial reporting under cash basis. Both FNDS and BIOFUND will use transaction-based (statement of expenditures) disbursement procedures and the following disbursement methods may be used under the grant: (a) reimbursement; (b) advances; (c) direct payments; and (d) special commitments. The project implementing agency will prepare quarterly unaudited interim financial reports (IFRs) and provide such reports to the World Bank within 45 days of the end of each calendar quarter. The project financial statements for FNDS will be audited annually by the *Tribunal Administrativo*, which is constitutionally mandated to audit all government funds, while the audit for the BIOFUND will be carried out by a private sector audit firm acceptable to IDA recruited under World Bank Procurement Regulations for IPF Borrowers. Audit reports will be submitted to the World Bank no later than six months after the end of each financial year.

(ii) Procurement

73. **Procurement procedures.** The Borrower will carry out procurement under the proposed project in accordance with the World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations), dated July 2016 and revised in November 2017 under the NPF, and the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated July 1, 2016.

74. **Procurement capacity assessment.** FNDS's procurement capacity was recently assessed by an independent firm (ML Consultancy). The firm identified the existing capacity, weaknesses, challenges, and opportunities and prepared an action plan to improve the performance of this implementing agency, including the allocation of procurement practitioners by procurement category. The procurement capacity of the FNDS Procurement Unit was assessed by the World Bank as part of the FY17 Procurement Post Review (PPR). The unit comprises eight procurement practitioners, including procurement officers and procurement assistants. The team has experience with implementing World Bank projects but is not familiar with the World Bank's NPF. The unit is well equipped with office space and all the means to

satisfactorily perform the work. There is a need for improvement in the quality of the bidding documents prepared, the period for preparation and submission of the bids, and the record keeping system.

75. **Mitigating measures.** Considering the findings of the independent firm assessment and the results of the World Bank's FY17 PPR assessment, the division of procurement practitioners by category mentioned earlier needs to be assessed from time to time to ascertain the fitness of the proposed approach. Recently, a group of three procurement officers attended a training workshop on the NPF. The World Bank procurement team will continue working closely with the client to enhance the capacity of the implementing agent to efficiently process the procurement activities, improve the record keeping, and allow the client to use the advantages and flexibility of NPF to get better development results with adequate focus on results and value for money.

76. **Project Procurement Strategy for Development (PPSD).** On June 21, 2018, the client submitted to the World Bank a PPSD, which was revised and finalized on July 12, 2018. Because the project will follow the World Bank's NPF, the Borrower prepared a PPSD, to which the World Bank procurement team provided support and guidance. A simplified PPSD was prepared for this project. The PPSD sets out market approaches and selection methods to be followed during implementation, procurement risks and mitigation measures, and a Procurement Plan for the next 18 months.

77. Considering that (a) most of the activities of the project are of small value; (b) the local market is able to respond to the demand; and (c) national procurement systems have been assessed by the World Bank and found acceptable subject to minor modifications, the following goods, works, non-consulting services, and consulting services will be procured using the national procedures and approach: (i) construction of office and houses, maintenance of road and bridges, construction and rehabilitation of outdoors, fencing, water supply systems, and road network of the reserve; (ii) IT equipment, office equipment, communication equipment, field equipment; printing of reports and documents, production of videos and other material for the project; and (iii) design of the website and communication strategy; design and implementing of a revolving credit savings program, review of the management plan of the Marromeu complex, CNR and MSR and partial marine reserve of Ponta do Ouro, construction supervision consultancy, consultancy for the development of biodiversity offsets guidelines, and consultancy for ecosystem services assessment (fisheries and water services).

78. The above goods, works, and non-consulting services and consulting services procured through the national procedures and national approach will use the following methods: (a) goods, works, and non-consulting services (request for bids, request for quotations, and direct selection) and (b) consulting services (Selection Based on Consultants' Qualification, Least-Cost Selection, and Direct Selection). All those activities will be below the prior review threshold. On the other hand, (a) some consulting services, such as the basic infrastructures deployment plan will require international expertise, therefore requiring international procurement approach, using the Quality- and Cost-Based Selection (QCBS) method and prior review by the World Bank and (b) some procurements of goods (for example, acquisition and installation of an e-visa system) will require international expertise, therefore an international approach under the Request for Bids method will be required due to its complexity and low capacity of the local market. Special consideration will be given to the procurement of vehicles, tractor, trailer, and motorcycles for which Direct Selection will apply to avoid delay and accelerate the delivery of those goods that are important for commencement of the project implementation. The client will use the United Nations Office for Project Services for procurement of those goods.

C. Safeguards

Safeguards policies triggered

79. MozBio 2 triggers six of the World Bank's Safeguard Policies, namely OP 4.01 Environmental Assessment, OP 4.04 Natural Habitats, OP 4.36 Forestry, OP 4.09 Pest Management, OP 4.11 Cultural Heritage and OP 4.12 Involuntary Resettlement.

- OP 4.01 Environmental Impact is triggered because of the sub-projects potential to cause negative environmental and social impacts in its area of influence.

- OP 4.04 Natural Habitats is triggered to ensure that sub-projects do not convert or degraded critical habitats or lead to significant loss natural habitats, be it directly (through the construction) or indirectly (with the human activities caused by the project).

- OP 4.09 Pest Management is triggered because some subprojects foresee the acquisition of pesticides or application equipment which could pose risks to health and environment if not properly managed.

- Certain projects, as small-scale irrigation, increase of livestock areas, etc., can result in the creation or expansion of pest management plans.

- OP 4.36 Forest is triggered because of the potential positive impacts on forest health due to improved changes on management, conservation and use of natural forests.

- OP 4.11 Cultural Heritage is triggered because the project may affect or involve physical cultural resources due to civil works that may require some excavations or earth movements. The Environmental and Social Management Framework (ESMF) includes provisions to apply "Chance Finds" procedures in compliance with this policy requirement.

80. MozBio 2 will not finance activities requiring physical resettlement, and activities will be screened to avoid physical resettlement entirely and economic displacement as much as possible. Nevertheless, OP 4.12 Involuntary Resettlement is triggered because the project may cause situations involving involuntary restrictions of access to land and natural resources in conservation areas. The livelihood restoration of people affected by the project related to resource access restrictions will be addressed through a Process Framework (PF). No or minimal resettlement is expected with respect to infrastructure construction. A simplified RPF has been prepared to address screening procedures and criteria for infrastructure projects seeking to avoid any physical resettlement and livelihoods impacts, to the extent possible and limiting potential direct asset losses to local communities to less than 20% of the People Affected by the Project (PAP)'s assets/income.

81. In the infrastructure constructions, MozBio 2 will recruit local workforce, to the extent possible, to avoid labor influx. Nevertheless, in the cases where the works require specialized staff not available in the community, the project will assess the risks and incorporate environmental and social mitigation measures into the civil works contract between the contractor and the Borrower. The responsibilities for managing these adverse impacts will be clearly reflected as a contractual obligation, with appropriated

mechanisms for addressing non-compliance. The risk of large influx of male labor that could lead to an increase of gender-based violence (GBV) is minimal, however, the project will address this risk by (i) ensuring the contractor implements robust measures including training, awareness raising and introducing a Worker Code of Conduct as part of the employment contract; (ii) information and awareness- raising campaigns for community members, specifically women and girls, and (iii) disseminating the Grievance Redress Mechanism to report workers' misconduct and complaints.

Environmental Safeguards

82. **Like its predecessor, MozBio 2 is a Category B-partial assessment project since potential direct negative environmental and social impacts will be minor, site specific, reversible, and easily manageable.** Project environmental and social impacts will in part result from construction of civil works for essential and necessary facilities (administrative buildings, small bridges, and improvement of existing access roads in selected CAs) and community agricultural activities near the CAs. Construction or rehabilitation of facilities is expected to produce localized adverse environmental and social impacts that are low to moderate while also minimizing or avoiding, to the extent possible, impacts on natural habitats, forests, or physical displacement. Potential negative impacts will mostly occur during implementation (construction) and include soil erosion or contamination from civil works or agriculture activities due to solid wastes, pesticides, leakage, or spill of hazardous materials; water quality which could be affected by abstractions and diversions or due to the discharge of fertilizers, nutrients, different chemicals to be used for pest management; vegetation and fauna disturbance due to clearance for construction and even rehabilitation of new infrastructures, NBT, and community development projects; air quality due to dust emissions during construction; and risks to the health and safety of contractor's workers and communities. As the project will promote private sector investments in NBT and other developments in CAs, environmental impacts resulting from the increased tourism activities and resources requirements by tourists can be expected and may include fauna disturbance, littering, emissions from vehicles, machinery (including diesel generators), and increased road traffic which could lead to road safety risks to community and fauna. Because specific details of the project investments will only be known during implementation, the Borrower updated the Environmental and Social Management Framework (ESMF), the Pest Management Plan (PMP) and the Process Framework (PF) for MozBio 1. These instruments together with a new Resettlement Policy Framework for MozBio 2 were publicly consulted upon and disclosed in-country on July 18, 2018. Similarly, the existing sub-instruments in use for MozBio 1, such as the Environmental and Social Screening Checklist and the Environmental and Social Management Plans (ESMPs) were reviewed, as well as the environmental clauses and penalties for nonconformity to the ESMPs. If needed for certain subprojects due to foreseen potential negative environmental impacts, an Environmental and Social Impact Assessment will be prepared to identify, assess, and adequately manage those impacts. The ESMF, PMP, PF and RPF also include budget and a capacity-building strategy for the PIU. The PIU is the same that has been implementing MozBio 1 for four years. Currently, the PIU has one environmental and social specialist and six community officers based at central level and CAs level respectively, who work on safeguards issues. FNDS has three additional safeguards specialists at the central level and three at provincial level to oversee other World Bank-financed projects (Mozambique Forest Investment Project and Sustenta). The FNDS safeguards specialists are working as a team and improving their ability to share tasks and expertise across the FNDS portfolio.

Social Safeguards

83. The main social risks of the project relate to (a) access restrictions to forests and natural resources; (b) human-wildlife conflict; (c) impacts of infrastructure projects; and (d) indirect impacts of private sector investments on communities in CAs as well increase in NBT activities and resource requirements of tourists have also been identified as sources of potential impacts

84. Access restrictions to natural resources in core areas of the CA for local communities may be caused by (a) new constructions and investments—mainly related to CA operations and tourism— that will be guided by updated CA management and business plans; (b) reinforced restrictions and implementation of strategies to regulate the use of natural resources within the protected according to CA management plans (legally approved); and (c) restrictions resulting from the implementation of tourism- or production-related activities. The livelihood restoration of people affected by the project will be addressed through a Process Framework (PF). The Borrower reviewed and updated the PF that was approved for MozBio 1.

85. The project has allocated funds for the mitigation of human wildlife conflict in each targeted CA to reduce the impacts of wildlife on community activities. These measures include risk mapping to prioritize interventions by the CA management and dissemination of the results; signaling hot spot areas; fencing (chili pepper plant fences, beehives' fences, and so on); locating watering holes away from key community sites; and technical training, among others.

86. No or minimal resettlement is expected with respect to infrastructure construction. A simplified Resettlement Policy Framework (RPF) has been prepared to address screening procedures and criteria for infrastructure projects: (a) seeking to avoid any physical resettlement and livelihoods impacts, to the extent possible; (b) limiting potential direct asset losses to local communities to less than 20 percent of the project-affected persons' assets/income; and (c) providing the conditions to address any unavoidable impacts in accordance with OP 4.12 (Involuntary Resettlement). The simplified RPF has been prepared and will be included as an annex to the PIM.

87. Community partnerships with the private sector supported by MozBio 2 will follow guidelines prepared by the government and used in other World Bank-financed projects. Those guidelines—that will be attached to the PIM—require these partnerships to include community agreements to ensure equitable and sustainable conditions in accordance with OP 4.12. Participatory processes will emphasize community agreements. Where any involuntary land acquisition, displacement or restriction of access is identified the RPF, and/or PF will be applied. The RPF and the updated PF were consulted upon and disclosed on July 18, 2018, both in-country and on the World Bank website.

88. **Citizen engagement.** The project aims to connect local communities' perception of CAs' social impact with CAs' management decisions. To assess communities' perception, the SAPA methodology will be applied for assessing positive and negative social impacts on the well-being. This participatory assessment will contribute to enhance community participation in management decisions that will be made by the CAs' Management Councils and to evaluate the potential social impacts of selected activities. These Management Councils will also be implemented and financed by the project; it is expected that they will enhance the participation of local politicians in strategic decisions of CAs based on demand-side social accountability, including social participation. To ensure transparency, accountability, and learning,

the social assessment will be implemented thrice during the project life and people who believe that they are adversely affected by the project may submit complaints to the existing project-level grievance redress mechanism (GRM). The specific elements of the framework for citizen engagement include (a) support to communities' engagement and participation through the CAs' Management Councils; (b) support CAs' Management Councils in determining priorities and activities related to livelihood aspects and biodiversity conservation; (c) support to the implementation of the GRM; (d) capacity building at the local, provincial, and national levels in engagement with target beneficiaries and the SAPA methodology. The protocol and mechanisms for elements of this citizen engagement framework will be detailed in the PIM. Quality of its implementation and progress will be monitored both at local (CA), landscape, and project level through supervision and dialogue.

Table 3. Citizen Engagement Framework

PDO: To improve management of target conservation area landscapes and enhance the living conditions of communities in and around these conservation areas	**Relevant Citizen Engagement Activities**	**Citizen Engagement Results and Approach to Management**
Citizen engagement supports the PDO, by engaging local communities in decisions about CA management, thereby improving social impact perception of the CA by local communities	• Participatory Social Assessment (SAPA methodology) • CAs' Management Councils implantation and maintenance • Feedback mechanism across communities (GRM) • Capacity building of CAs and provincial and national staff on social assessment	• PDO Results Indicator #3: Target landscapes with positive variation in local communities' perception of CAs' impact in well-being • Data source: Household survey as a step of SAPA methodology

89. **Gender.** Women bear the heavy burden of ensuring the livelihood sustainability of rural households. Moreover, restrictions on their participation in public consultations and decision-making spaces, customary laws, and low level of literacy all play against women empowerment within the community. As such, MozBio 2 envisages empowering women by (a) ensuring their active participation in project consultation and decision mechanisms at the community level; (b); increasing their access to employment in the CAs (that is, female rangers) and in the value chains under the MGS (30 percent must be women and youth); (c) promoting greater participation of women in credit and savings schemes and literacy training and all forms of capacity building; (d) establishing girls clubs in the schools of the three CAs to decrease school dropout and reduce premature marriages; and (e) providing access to training opportunities and benefits to increase their capacity on leadership conservation schemes. The project will also define measures to ensure that women are adequately represented and participate in both project activities and decision-making processes. The revised PF will make relevant provisions to ensure participation of women and other vulnerable groups in community agreements so that they are not worse off, and alternative sources of livelihood and income generating activities have been suggested to accompany shifts in the living conditions of communities participating in the project.

90. **GRM**. MozBio 2 will rely on the common grievance and redress mechanism that has been established for all projects included in the World Bank's Integrated Landscape Management Portfolio in

Mozambique—called the GRM. A manual of procedures and a communication strategy were prepared and an IT platform was designed to register and monitor the reported cases. This mechanism has been discussed with key stakeholders, including local communities, and has been tested in the MSR to validate its procedures. The GRM is in the process of being implemented and will be operationalized in target landscapes.

Grievance Redress Mechanism

91. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

V. KEY RISKS

92. **The overall risk rating is Moderate**. This is the second phase of a project that is performing well. Key institutions and implementing entities have sound technical knowledge and experience with implementing World Bank projects. The only project risk rated as Substantial is political and governance.

93. **Political and governance: Substantial.** Presidential, national assembly, and provincial elections are scheduled for October 2019 and could cause political pressures on FNDS-managed resources, as well as risks of security disruption from conflicts between the two main parties, possibly affecting project areas. Conflicting interests of various actors over the use of natural resources around CAs, including local governments, may be intensified given the reliance on revenues from natural resources (particularly from logging) to fund elections, which in turn may erode local political support for sustainable natural resources management.

94. **Proposed mitigation measures to political and governance.** FNDS fiduciary capacity has been continuously improved, including through a dedicated World Bank-financed TA Project, "Integrated Forests and Landscape and Management", P161745. Transparent mechanisms for funds allocation and use are under implementation; however, there is a residual risk of political pressure on FNDS' resources. The project will rely on the general policy dialogue between the government and the World Bank to address these issues. The project will implement the Management Councils, which is expected to enhance the participation of local politicians and other stakeholders in strategic decisions of CAs. Increased revenues and benefits to local communities is also expected to increase the positive perception of local decision makers of CAs. MozBio 2 allows the World Bank to continue the policy dialogue on these complex issues and raise its concerns to high

levels of government. The World Bank will also continue to encourage policy changes (such as the international conference on NBT and forum on investment promotion, which took place in June 2018).

95. **Social safeguards and institutional capacity for implementation and sustainability risks are rated Moderate.** Social safeguards risks are explained in the section on safeguards. Institutional capacity for implementation and sustainability is rated as Moderate, mainly because of ANAC's insufficient capacity to manage the large CA system in Mozambique. This is being mitigated by continued and targeted capacity support to ANAC, promotion of PPPs in CA management, and reliance on FNDS and BIOFUND as implementing agencies for the project. By strengthening the co-management approach, MITADER effectively established a framework where field results are possible. Both FNDS and BIOFUND have demonstrated their capacity to support the conservation agenda, and MozBio 2 gives them increased responsibilities. MozBio 2 also takes a different approach to ANAC capacity building by focusing on a few areas of support, particularly a business unit to regulate and oversee PPPs.

VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Mozambique

Mozambique Conservation Areas for Biodiversity and Development - Phase 2

Project Development Objectives(s)

To improve management of target conservation area landscapes and enhance the living conditions of communities in and around these conservation areas.

Project Development Objective Indicators

Indicator Name	DLI	Baseline 2019	End Target 2024
Management improvements of target conservation area landscapes			
CAs with improved management effectiveness (Number)		0.00	3.00
CAs with improved management effectiveness: Elephant Coast CA (Number)		59.00	70.00
CAs with improved management effectiveness : Chimanimani CA (Number)		47.00	59.00
CAs with improved management effectiveness: Marromeu Complex (Number)		37.00	47.00
Species population maintenance, and/or increase (Yes/No)		No	Yes
Key Species population maintenance, and/or increase: Elephant Coast CA (1.Elephant, 2.Reedbuck, 3.Serranidae family) (Yes/No)		No	Yes
Key Species population maintenance, and/or increase. Chimanimani NR (1.Apalis chirindensis (Passerine Bird); 2.Olea Chimanimani (Olive shrub)) (Yes/No)		No	Yes

Indicator Name	DLI	Baseline 2019	End Target 2024
Key Species population maintenance, and/or increase. Marromeu Complex (1. Buffalo, 2. Sable) (Yes/No)		No	Yes
Living conditions of communities in and around target conservation area landscapes enhanced			
Target landscapes with positive variation in local communities' perception of CAs' impact in wellbeing (Number)		0.00	3.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline 2019	End Target 2024
C1:Strengthen Capacity of National Conserv. Institutions & Financial Sustainability of the CA system			
People trained by the Conservation Leadership Initiative (of which % of women) (Number)		0.00	445.00
% of women trained by the Conservation Leadership Program (Number)		0.00	26.00
Electronic visa acquisition process piloted (Yes/No)		No	Yes
Co-Management Agreements in target CAs signed by the relevant authority (Number)		1.00	3.00
Amount of non-IDA funds disbursed by BIOFUND for operation costs in the CA Network (of which amount disbursed to the three target CAs) (Amount(USD))		0.00	2,000,000.00
Amount of non-IDA funds disbursed by BIOFUND to the three target CAs for operation costs, out of the total (Amount(USD))		0.00	300,000.00
C2: Improving Conservation Areas Management in target landscapes			
CAs' Management Councils functional (Number)		0.00	3.00

Indicator Name	DLI	Baseline 2019	End Target 2024
Target landscapes with basic infrastructure established under the project (Number)		0.00	3.00
New private tourism concessions (Number)		0.00	4.00
New private tourism concessions: Elephant Coast CA (Number)		0.00	3.00
New private tourism concessions: Chimanimani NR (Number)		0.00	1.00
Number of Environmental and/or girl clubs created in target landscapes (Number)		0.00	27.00
Number of Environmental and/or girl clubs created in: Elephant Coast CA (Number)		0.00	9.00
Number of Environmental and/or girl clubs created in: Chimanimani CA (Number)		0.00	9.00
Number of Environmental and/or girl clubs created in: Marromeu Complex (Number)		0.00	9.00
C3: Promoting conservation-compatible rural dev.&integrated landscape management in target landscape			
Grievances registered related to delivery of project benefits effectively addressed (Percentage)		0.00	90.00
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Elephant Coast CA (Percentage)		0.00	90.00
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Chimanimani CA (Percentage)		0.00	90.00
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Marromeu Complex (Percentage)		0.00	90.00
Participants in Rotating Saving and Credit Scheme cycles (Number)		0.00	1,080.00
Number of conservation-compatible businesses under implementation (Number)		0.00	36.00

Indicator Name	DLI	Baseline 2019	End Target 2024
Rural households integrated into conservation-compatible value chains in targeted landscapes (Number)		0.00	3,000.00
Rural households integrated into conservation-compatible value chains in Elephant Coast CA (Number)		0.00	1,000.00
Rural households integrated into conservation-compatible value chains in Chimanimani CA (Number)		0.00	1,000.00
Rural households integrated into conservation-compatible value chains in Marromeu Complex (Number)		0.00	1,000.00
Share of women participants in Rotating Saving and Credit Scheme cycles (Percentage)		0.00	60.00
Share of conservation-compatible businesses under implementation led by women (Percentage)		0.00	30.00
Share of rural households integrated into conservation-compatible value chains, headed by women (Percentage)		0.00	30.00

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
CAs with improved management effectiveness		Annual	Management Effectiveness Tracking Tool (METT)	Implementation of the METT scoring. Implementation of the METT scoring. CA Management effectiveness improved when METT score has	FNDS

				increased by 20% of the baseline scores.	
CAs with improved management effectiveness: Elephant Coast CA					
CAs with improved management effectiveness : Chimanimani CA					
CAs with improved management effectiveness: Marromeu Complex					
Species population maintenance, and/or increase		Annual	Field assessment and population surveys.	The method of each species population estimate will be presented in the M&E Manual. Species Population maintenance is defined as maintained and/or increased if at least 100% of the key species in at least 60% of the target CAs are maintained and/or increased.	FNDS
Key Species population maintenance, and/or increase: Elephant Coast CA (1.Elephant, 2.Reedbuck, 3.Serranidae family)				For baselines purposes, there are the following figures that will be reviewed in the first year of the project: a.1) Population estimate 400 (2016) a.2) Population	

				estimate 2,600 (2016) a.3) Absence or Presence in Study Area (2018)	
Key Species population maintenance, and/or increase. Chimanimani NR (1.Apalis chirindensis (Passerine Bird); 2.Olea Chimanimani (Olive shrub))				For baselines purposes, there are the following figures that will be reviewed in the first year of the project: b.1) Absence or Presence in Study Area (2015) b.2) Extent of Occurrence 85km2 (2017)	
Key Species population maintenance, and/or increase. Marromeu Complex (1. Buffalo, 2. Sable)				For baselines purposes, there are the following figures that will be reviewed in the first year of the project: c.1) Population estimate 18.600 (2016) c.2) Population estimate 1.100 (2016)	
Target landscapes with positive variation in local communities' perception of CAs' impact in wellbeing		Biennial	Household surveys	Indicator developed based on standard questions in Social Assessment for	FNDS

				Protected Areas (SAPA) Household survey (Pages 61 and 62 SAPA's Manual). The methodology identifies significant social impacts, explore these impacts and related governance issues in more depth to generate recommendations for management action. The positive perception variation will be compared with the baseline planned to be collected in the first year of the project. (http://pubs.iied.org/14659IIED)	

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
People trained by the Conservation Leadership Initiative (of which % of women)		Annual	List of participants and registries in the Conservation	Data compilation after documentation review. The target of 26% trained women represents 115 women	BIOFUND

			Leadership Initiative that completed the program.	at all, and this target will be considered as follows: 27 trained women from CA's staff, and 88 trained women from other institutions	
% of women trained by the Conservation Leadership Program					
Electronic visa acquisition process piloted		Annual	Official records	Official data registry of Electronic visa adoption	FNDS
Co-Management Agreements in target CAs signed by the relevant authority		Annual	Co-management agreements	Review and count of signed new co-management agreements for the targeted CAs. This indicator is triggered by the submission of the co-management agreement to the Council of Ministers, or the immediate signature by the relevant Minister or relevant authority.	FNDS
Amount of non-IDA funds disbursed by BIOFUND for operation costs in the CA Network (of which amount disbursed to the three target CAs)		Annual	BIOFUND and ANAC records	Review financial report at year end.	BIOFUND

Amount of non-IDA funds disbursed by BIOFUND to the three target CAs for operation costs, out of the total					
CAs' Management Councils functional		Annual	Institutional assessments	The Management Council will be considered functional if, and only if, it contemplates three criteria: (a) legally established which means approved by the council of ministers (b) meets at least twice a year, (c) produces and circulates minutes, (d) review annual work plan of the CA.	FNDS
Target landscapes with basic infrastructure established under the project		Annual	Field visits	The calculation method defines the completion percentage of each priority infrastructure in each target landscape. For each step from the procurement process to the end of the construction a percentage is generally distributed as follows: 50% until consignment; and the other 50%	FNDS

				during the construction phase. A planned priority infrastructure will achieve 100% when completed and its landscape will be counted when all of its planned infrastructure be completed.	
New private tourism concessions		Annual	Review of signed tourism concession agreements;	Data compilation after documentation review.	ANAC
New private tourism concessions: Elephant Coast CA					
New private tourism concessions: Chimanimani NR					
Number of Environmental and/or girl clubs created in target landscapes		Annual	List of participants of each school;	Data compilation after documentation review.	FNDS
Number of Environmental and/or girl clubs created in: Elephant Coast CA					
Number of Environmental and/or girl clubs created in: Chimanimani CA					
Number of Environmental and/or girl clubs created in: Marromeu Complex					

Grievances registered related to delivery of project benefits effectively addressed		Annual	Safeguard Instrument Service	Data compilation	FNDS
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Elephant Coast CA					
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Chimanimani CA					
Grievances registered related to delivery of project benefits effectively addressed, disaggregated: Marromeu Complex					
Participants in Rotating Saving and Credit Scheme cycles		Annual	Data of people participating in the PCRs comes from the LMUs which will be overseeing the work of the service providers supporting the establishment of PCR in the targeted	Data compilation. End target is defined as 12 PCRs per target CA (3 CAs) x 30 people per PCR.	FNDS

			landscapes.		
Number of conservation-compatible businesses under implementation		Annual	Field visits; Surveys	Data compilation; This end target was reached by assuming that the maximum a small business could cost would be 200,000 dollars and of which the project would fund 80% of those meaning the creation of 24 of these types of projects and the maximum for a big business would 1,000,000 dollars of which project would fund 40% of those meaning the creation of 12 of these types of projects thus giving us 36 possible business in our landscapes with the budget allocated.	FNDS
Rural households integrated into conservation-compatible value chains in targeted landscapes		Annual	Matching grant registries; Field Visits.	Data compilation ; This end target was reached by assuming from the previous indicator that if a small business has around 50 beneficiaries and a big business has	FNDS

				around 200 beneficiaries then	
Rural households integrated into conservation-compatible value chains in Elephant Coast CA					
Rural households integrated into conservation-compatible value chains in Chimanimani CA					
Rural households integrated into conservation-compatible value chains in Marromeu Complex					
Share of women participants in Rotating Saving and Credit Scheme cycles					
Share of conservation-compatible businesses under implementation led by women					
Share of rural households integrated into conservation-compatible value chains, headed by women					

ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Mozambique
Mozambique Conservation Areas for Biodiversity and Development - Phase 2

Financial Management Arrangements

Financial Management Assessment

1. An FM assessment of the second phase of the Mozambique Conservation Areas for Biodiversity and Development was carried out in June 2018. The objective of the assessment was to determine the degree to which FNDS and BIOFUND identified as the implementing agencies, have acceptable FMs arrangements for the implementation of the proposed second phase of the Conservation Areas for Biodiversity and Development - Phase 2 (MozBio 2).

2. The assessment was carried out in accordance with the Directives and Policy for IPF and the World Bank Guidance on FM in World Bank IPF Operations issued on February 28, 2017. The overall FM was assessed to be adequate, and the risk rating was assessed as Moderate. Some mitigation measures are proposed accordingly.

3. The FM assessment revealed that there are adequate FM arrangements both for FNDS and BIOFUND, established over the time on implementation of the previous phase of the project. Both implementing agencies have experience in managing World Bank-financed operations and are currently managing the first phase of the Conservation Areas for Biodiversity and Development - Phase 1 (P131965), for which the most recent FM performance rating for the Implementation Status and Results Report (May 2018) was Moderately Satisfactory and the FM risk was Moderate. Audit reports have been received on time with unqualified opinions. The overall FM was assessed to be adequate, and the risk rating was assessed as Moderate.

Project Implementation Arrangements

4. The project will be implemented by FNDS, with BIOFUND responsible for implementation of their specific aforementioned activities. During implementation, GoM shall maintain a Project Steering Committee (PSC) chaired by the CEO of FNDS, and comprising representatives from ANAC, MITADER, Ministry of Culture and Tourism (MICULTUR), Ministry of Agriculture and Food Security (MASA), Ministry of Sea, Inland Waters and Fisheries (MIMAIP), BIOFUND, the private sector, and civil society organizations. FNDS is an autonomous institution under MITADER. BIOFUND is a foundation and private financial institution in the conservation of biodiversity; it is a private financial institution with the aim of the financial conservation biodiversity in Mozambique.

Risk Assessment and Mitigation Measures

5. Table 1.1 summarizes the risks identified, the risk rating, and mitigating measures.

Table 1.1. Identified Risks, Risk Ratings, and Mitigation Measures

Risk	Residual Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Yes/No)
Inherent Risks				
Country Level Major weaknesses exist in the FM environment (staffing, operating system, reporting), resulting primarily from low capacity and inadequate internal controls and auditing.	S	The World Bank and development partners continue to support public finance management (PFM) reforms in Mozambique. The Mozambique Public Expenditure and Financial Accountability (PEFA) 2015 concluded that Mozambique has succeeded in consolidating major improvement in PFM system.	S	No
Entity Level FNDS and BIOFUND are currently managing several projects financed by different organizations and may not devote required attention or pay due diligence on FM aspects of the project.	M	The capacity of both entities will be reassessed during implementation support missions and strengthened as needed. The project implementation arrangements will be documented in the PIM.	M	No
Project Level Project design relatively complex, as this involves matching grant procedures.	S	Clearly defined FM procedures and funds flow and accountability and reporting will be documented in the PIM, including the matching grant implementation arrangements. The project will be periodically supervised by the World Bank FM specialist.	M	No
Overall Inherent Risks	**S**			
Control Risks:				
Budgeting An ineffective budget monitoring system which can lead budgetary overrun.	S	The budget monitoring procedures will be documented in the PIM. FM staff assigned to the project have acceptable skills and competencies to perform their work.	M	No
Accounting Project accounting system may not follow appropriate accounting standards. The overall poor capacity in the country makes it difficult to recruit qualified FM staff in the project.	S	FNDS uses accounting procedures in line with International Public Sector Accounting Standards - Cash Basis and complemented by an automated accounting software to account for project funds.	M	No

Risk	Residual Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating	Condition of Negotiations, Board or Effectiveness (Yes/No)
Internal Control Noncompliance with key project internal control procedures due to weak internal control environment and oversight mechanisms in the country	S	The project will follow the procedures documented in the *Manual de Administração Financeira*, which has been designed to mitigate internal control risk. The oversight bodies (IGF, internal audit units at FNDS, and BIOFUND) may review the operations of this proposed project.	S	No
Funds Flow Project funds for matching grants may not be used for purpose intended.	S	The matching grants implementation procedures will be documented in the PIM.	S	No
Financial Reporting Interim financial reports will not be submitted on time.	M	FNDS and BIOFUND have experienced in preparing and submitting good-quality IFRs on time.	S	No
Auditing Audit report of the project component to be implemented by BIOFUND may not be submitted on time due to the delay.	S	The recruitment of the private audit firm will be done within six months after project effectiveness. Financial statement will be made available within 3 months after the end of the year.	M	No
Overall control risk	M		M	
Overall risk rating	M		M	

Note: IGF = *Inspeção Geral das Finanças* (General Inspectorate of Finance); H = High; S = Substantial; M = Moderate; L = Low.

6. The overall FM risk rating for the project is assessed as Moderate.

7. **FM action plan.** To mitigate FM risks, the following measures should be taken[19].

Table 1.2. FM Action Plan

No.	Action	Responsibility	Completion dates
1	Register Project on country FM systems and on state budget	FNDS/BIOFUND	Within two months after project signing.
2	Update the PIM including FM procedures	FNDS/BIOFUND	No later than three months after effectiveness.

[19] The covenants mentioned in the FM Action Plan are also set forth in the PIM.

No.	Action	Responsibility	Completion dates
3	Appoint the project external auditors	BIOFUND	No later than six months after effectiveness.

Budgeting

8. Budget preparation will follow national procedures and be documented in the PIM. The project budget for BIOFUND will be captured in the BIOFUND annual workplan and budget. The project budget within FNDS (MozBio 2) will be registered with the National Budget Directorate and the National Treasury Directorate (*Direcção Nacional do Tesouro*, DNT) to allow the use of the country FM systems. Budget execution will be monitored through the FNDS accounting system. The budget preparation, execution, and monitoring process will be documented in the FM Manual by three months of project effectiveness.

Internal Control Procedures

9. Internal controls and accounting procedures at the MozBio 2 will be based on national procedures, defined in the *Manual de Administração Financeira* and PIM. The internal audit unit, *Gabinete de Auditoria e Controle Interno*), based at FNDS will be responsible for the internal audit. A review will be carried out at least once a year. The project may also be subject to the review of the Finance General Inspection. In addition, alternatives measures such as regular supervision should be also carried out by the World Bank. FM procedures will be documented in the FM Procedures Manual.

Staffing

10. BIOFUND is currently staffed with an FM manager and an accountant. They all have experience in handling donor-funded projects, including World Bank-financed operations. Both, the FM manager and the accountant would benefit from FM and disbursement training if needed.

11. FNDS has a qualified and experienced financial manager supported by two project accountants. The accounting staff from FNDS already has been granted access to the country FM systems and will be able to execute transactions. Access to the government's e-SISTAFE will be required for the FM manager.

Accounting System

12. FNDS will use the existing computerized accounting software that enables key controls and can produce timely and reliable financial information. It will also make use of the government's own IFMIS (e-SISTAFE). The system has embedded segregation of duties in it, which is a key internal control. Financial report will be prepared on cash basis, in accordance with GoM requirements, and in alignment with the International Public Sector Accounting Standards. The BIOFUND will continue to make use of the same accounting system by the ongoing project (P131965 MozBio 1) as it is not connected to e-SISTAFE.

Financial Reporting

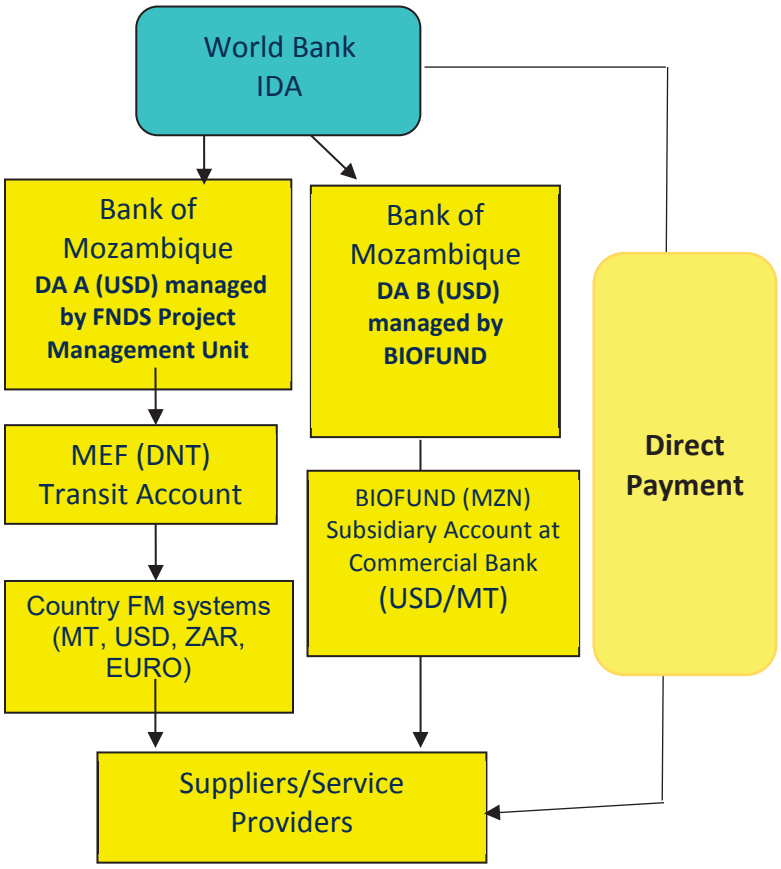
13. Both implementing entities produce quarterly financial reports and annual financial statements (PFS) of the ongoing projects. For the proposed project, the implementing agencies will produce and submit to the World Bank biannual IFRs within 45 days after the end of the calendar semester. The format

used during the first phase will apply. In addition, the agencies will also produce annual project financial statements in accordance with Financial Reporting under Cash Basis of Accounting.

Funds Flow

14. To facilitate the implementation of the project activities, two Designated Accounts (DAs) will be open: DA-A for FNDS in U.S. dollar at the Banco de Moçambique and DA-B for BIOFUND to be opened at Banco de Moçambique, and a project account at a commercial bank acceptable to the World Bank. The DA-B funds will flow from IDA through Banco de Moçambique in foreign currency, and they will in turn be transferred in local currency to the local commercial bank account managed by BIOFUND. Funds in both DAs will be used to finance eligible project expenditures in accordance with the Financing Agreement and Disbursement Letter and financial information. From the DAs, the PMUs (FNDS and BIOFUND) will (a) make payments for foreign consultants and suppliers of goods and services and (b) transfer funds to the DA subaccount in local currency to facilitate payments of local eligible project expenditures. Figure 1.1 depicts the funds flow mechanism for the project activities to be financed under the traditional disbursement methods.

Figure 1.1. Funds Flow Mechanism for Project Activities to be Financed Under Traditional Disbursement Methods



Disbursement Arrangements

15. The project will use transactions-based disbursement. An initial advance will be made into the DAs upon the effectiveness of the Financing Agreement, based on the DA ceiling and at the request of FNDS. Withdrawals may be made up to an aggregate amount not to exceed SDR 6,400,000, up to twelve months prior to the Signature Date for Eligible Expenditures under the Project. The advances will be based on the estimated cash requirements to meet the project expenditure for the first four months.

16. The project may also make use of other disbursement methods/such as (a) reimbursement disbursement method; (b) direct payment; and (c) special commitment. The World Bank will issue the 'Disbursement Letter and Financial Information Letter' which will specify the additional instructions for withdrawal of the proceeds of the IPF.

Table 1.3. Eligible Expenditures

Category	Amount of the Financing Allocated (expressed in SDR)	Percentage of Expenditures to be Financed (inclusive of Taxes)
(1) Goods, works, non-consulting services, Operating Costs, consulting services, Matching Grants for Parts Part A(i), A(iii), B(i) and C of the Project	25,071,000	100%
(2) Goods, works, non-consulting services, Operating Costs and consulting services for Parts Part A(ii), A(iv) and B(ii) of the Project.	6,929,000	100%
TOTAL AMOUNT	32,000,000	

External Auditing

17. The Administrative Tribunal (the country's Supreme Audit Institution) is mandated to audit all government funds, including donor-financed projects. As such, the Tribunal Administrativo (Administrative Tribunal) will have overall responsibility for the audits of MozBio 2. For BIOFUND, the audit will be carried out by a private sector audit company acceptable to IDA. The project financial statements will be audited in accordance with International Standards on Auditing. The audit report together with Management Letter will be submitted to IDA within six months after the financial year-end; that is, June 30 of each following year.

Effectiveness Condition

18. The following is FM effectiveness condition under the project: preparation and adoption of PIM including FM procedures within three months after the project effective date.

Implementation Support Plan

19. Based on the current overall FM risk of this operation, the project will be supervised twice a year. In addition to desk-based reviews, the FM officer will perform field visits to ensure that the project's FM arrangements operate as intended.

Procurement Arrangements

20. The Borrower will carry out procurement under the proposed project in accordance with the World Bank's 'Procurement Regulations for IPF Borrowers' (Procurement Regulations), dated July 2016 and revised in November 2017 under the NPF, and the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated July 1, 2016.

21. Considering that (a) national procurement systems have been assessed by the World Bank and found acceptable subject to minor modifications and (b) there is sufficient number of qualified contractors, suppliers, and consultants in the local market, most of the procurement of goods, works, and consulting services will be conducted through national approach under request for bids, request for quotations, Selection based on Consultants' Qualification, and Direct Selection procedures. On the other hand, considering the low capacity of the local market to respond to some procurements of goods (for example, acquisition and installation of e-visa system) and consulting services (for example, basic infrastructures deployment plan,) the approach will need to be open to International Bidding under request for bids and QCBS methods.

22. **The project will follow the World Bank's Procurement Regulations for IPF borrowers dated July 2016, revised November 2017, and this may represent a challenge for the procurement team**, given that the team is not familiar with this NPF. However, lessons learned from MozBio phase 1 and experience acquired by the FNDS procurement team may help mitigate this. The Procurement Unit at FNDS comprises seven procurement practitioners, including one procurement specialist and six procurement assistants, all with experience in procurement.

23. **Procurement Plan.** One of the results of the PPSD is a Procurement Plan covering the first 18 months of the program. The Procurement Plan includes the selection methods, market approach, and arrangements to be followed by the Borrower for procurement of goods, works, non-consulting services, and consulting services. The Procurement Plan will be updated, subject to the World Bank's no-objection at least every 12 months, or as required, to reflect the actual project implementation needs.

24. **Review by the World Bank of procurement decisions.** Table 1.4 indicates the initial values for prior review by the World Bank. All activities estimated to cost below these amounts shall be treated as post review and will be reviewed by the World Bank during the implementation support missions under a post procurement review exercise. Direct Contracting/Single-Source Selection will be subject to prior review only for contracts above the amount indicated below. The World Bank may, from time to time, review the amounts, based on the performance of the implementing agencies.

Table 1.4. Prior Review Thresholds

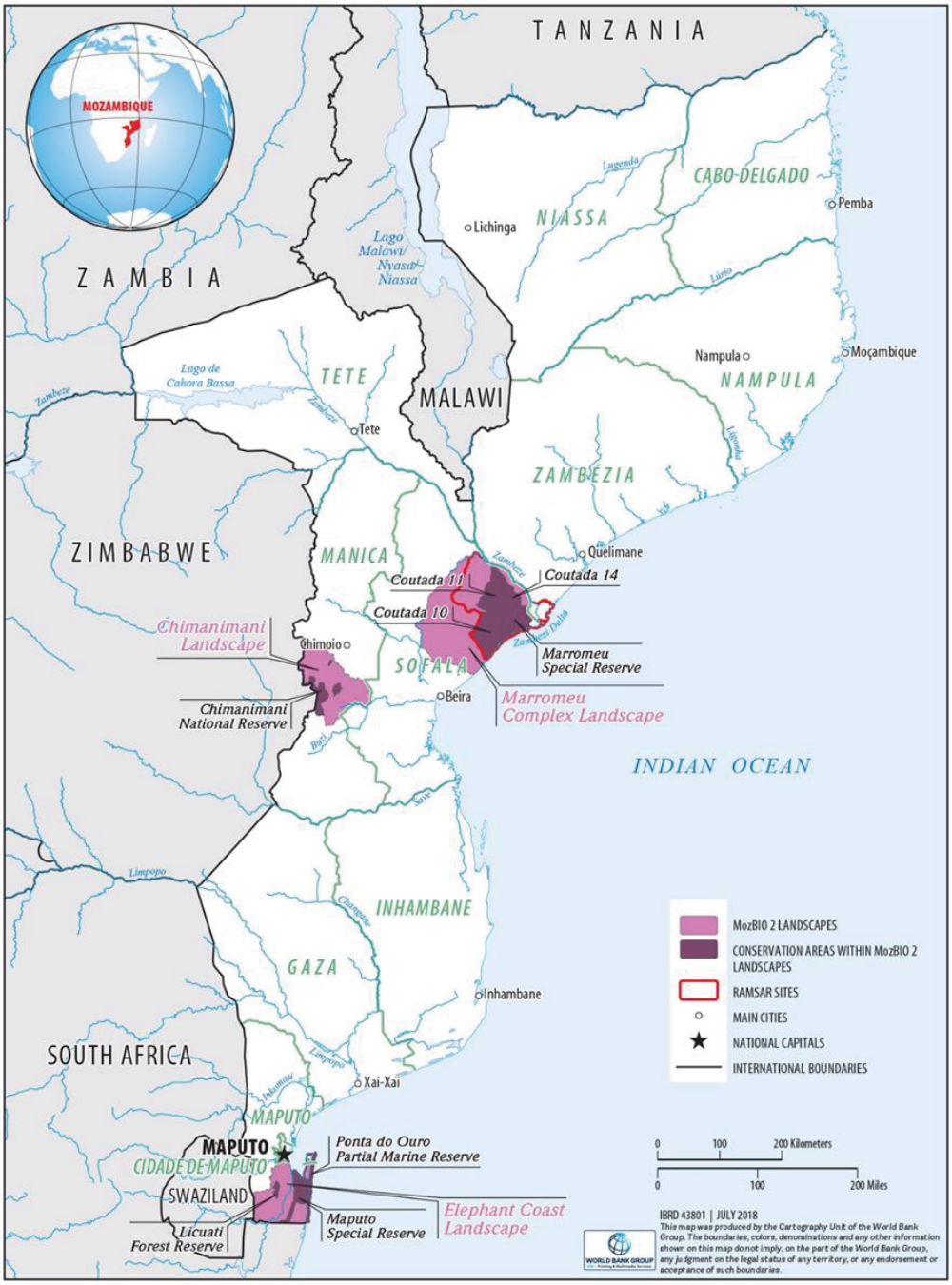
Procurement Type	Prior Review (US$)
Works	10,000,000

Goods and non-consulting services	2,000,000
Consultants (Firms)	1,000,000
Individual consultants	300,000

25. **Assessment of national procedures.** The Mozambique Procurement Regulation, the Decree 5/2016 of March 8, has been assessed as required under the World Bank's Procurement Framework. The assessment indicated that the country's Regulations are generally consistent with international best practice for the following reasons: (a) there is adequate advertising in national media; (b) the procurement is generally open to eligible firms from any country; (c) contracts documents have an appropriate allocation of responsibilities, risks, and liabilities; (d) there is publication of contract award information in local newspapers of wide circulation; (e) the national regulations do not preclude the World Bank from its rights to review procurement documentation and activities under the financing; (f) there is an acceptable complaints mechanism; and (g) maintenance of records of the procurement process.

26. However, the request for bids/request for proposals document shall require that bidders/proposers submitting bids/proposals present a signed acceptance at the time of bidding, to be incorporated in any resulting contracts, confirming application of, and compliance with, the World Bank's Anti-Corruption Guidelines, including without limitation the World Bank's right to sanction and the World Bank's inspection and audit rights. With the incorporation of the above provision, the Mozambique Procurement Regulation will be acceptable to be used under those procurements not subject to the World Bank's prior review, as the thresholds indicated in table 1.4, or any updates indicated by the World Bank in the Procurement Plan.

ANNEX 2: MozBio 2 Map



ANNEX 3: Matching Grant Scheme *Sustenta Biodiversidade*

A. Context

1. **The objective of the MGS under MozBio 2 - Sustenta Biodiversidade—is to improve the capacity of local entrepreneurs and MSMEs in managing conservation-compatible value chains in the targeted landscapes.** Investments supported by the MGS will have a catalytic role, demonstrating the incremental returns that can be achieved through access to TA (know-how), technology, inputs, and markets that are in line with broader conservation efforts. The MGS facilitates access to commercial financing and addresses financial access constraints of farmers, agro-dealers, fishers, local aggregators, tourism operators, and other MSMEs in conservation-compatible value chains in the targeted landscapes.

2. **The current market failures that are preventing smallholder farmers, associations, cooperatives and MSMEs from accessing financial markets require a set of interventions** that combine an approach to enhanced productivity and knowledge, as well as increased access to finance for inputs, equipment, and working capital needed for sustainable market-oriented and conservation-compatible activities. This approach builds on the ongoing implementation of the MGS under the Sustenta project (P149620), with adaptations aimed at improving synergies between conservation efforts around CAs and improved targeting regarding value chain opportunities and potential beneficiaries.

3. **As background, Sustenta Biodiversidade builds on the MGS implemented by the Sustenta project, currently under implementation by FNDS, which has performed well thus far.** Under the MGS of the Sustenta project, a total of 31 business plans have been financed during the first two years of Sustenta implementation, reaching about 6,400 smallholders with services (land preparation), marketing or inputs (fertilizer and improved seeds), and amounting to MTZ 160 million in implementation. An additional 45 business plans are advanced in the pipeline (32 emerging farmers and 13 MSMEs). By the end of Sustenta Phase 1 in October 2021, 100 small emerging commercial farmers are expected to have their business plans financed, as well as 25 MSME agribusinesses.

B. *Sustenta Biodiversidade*

4. ***Sustenta Biodiversidade*, the MGS under MozBio 2, will be demand driven.** Allocations will be made through a competitive selection process based on demonstrated evidence of benefits to rural communities, as well as to enhanced natural resources management and conservation. The matching grants will partly finance investments for TA or longer-term asset acquisition, such as equipment, tractors, micro irrigation, greenhouses, accommodation infrastructure, storage, and processing units. Beneficiaries will include (a) individual businesses to be identified within the first 18 months of the implementation of the project and (b) MSME, including input suppliers, buyers, processors, cooperatives. The types of value chains to be supported include agriculture, fisheries, forestry, wildlife management, and tourism.

5. **Matching grants will be provided through two windows:**

   (a) **Local entrepreneurs grant window***,* for small projects (values to be determined in the PIM) led by local entrepreneurs, whether individuals or CBOs. They are expected to contribute to a portion of the business plan costs (with funds from commercial banks or from their own resources).

(b) **MSMEs' grant window**, for medium and large projects (values to be specified in the PIM), targeted at MSMEs. They are expected to contribute to a portion of the business plan costs (with funds from commercial banks or from their own resources).

6. **Applicants and subsequent grantees of the MGS receive business development and implementation support in addition to financing.** The supporting team managed by FNDS includes extension agents, business and accounting officers, value chain assistants, a business development specialist, and a knowledge transfer expert. Support is targeted at beneficiaries, who receive assistance both in business plan preparation and implementation, as well as facilitated access to commercial credit. MSMEs will also receive support in preparing bankable business plans

7. ***Sustenta Biodiversidade* will be administered by the existing Matching Grant Unit (MGU) at FNDS,** headed by a coordinator, and supported by two grant advisors, and a financial and administrative officer. Depending on the volume of demand under the MGS, the MGU can hire additional resources or consultants on a competitive basis as needed. For instance, specialized resources have been hired to support the preparation of business plans in non-timber forest product value chains, which require specific expertise and higher level of assistance. At the landscape level, LMUs will lead the identification, preparation, and TA of eligible business plans.

8. **Applications will be reviewed by the MGU and approved by the existing Investment Committee, which ensures transparency and independence**. The Investment Committee comprises the MGU manager, Sustenta's partial credit guarantee service provider, a representative from the Ministry of Agriculture and Food Security and a business community representative, a representative of Mozambique's SMEs Association, and an independent agribusiness expert. Details on the functioning of the Investment Committee will be included in the PIM.

9. **The matching grant proposals will be evaluated using the following process.** Through initial expressions of interest by applicants, FNDS (including the LMUs at the landscape level) will provide preliminary support and TA for the preparation of business plans/proposals. Once it is finalized, the grant proposal will be presented to the MGU. The MGU will confirm that the eligibility criteria have been met (criteria to be detailed in the PIM) and ensure completeness of the documentation before submission to the Investment Committee. The committee will review and either approve or reject the proposal. Should the proposal be approved and require securing of additional resources and the project meets all other eligibility criteria, a conditional approval by the Investment Committee may be issued (which will be conditional on obtaining the required financing). Once evidence of the approval for the additional resources is obtained (for instance, from a commercial bank), the MGU could process the matching grant. The selection process by the MGU and committee will include validation of the feasibility analyses, financial appraisal, and validation of the financial and economic rate of return for the investment

10. **Matching grants under *Sustenta Biodiversidade* will prioritize young and women applicants in value chains with strong linkages with conservation.** At least 30 percent of the beneficiaries must be women and youth. Value chains could include, among others, (a) conservation agriculture and agroforestry; (b) NBT and wildlife management operations (for example, buffalo farming); (c) sustainable fisheries and livestock; and (d) processing and marketing of non-timber forest products and so on. Any proposed activity will have to be consistent with the existing zoning for the area. The direct involvement

of local communities/smallholders will be essential for the sub-project to be eligible for *Sustenta Biodiversidade* funds. The subproject applied should ensure benefit to local communities/smallholders.

11. **Detailed criteria to guide the selection of proposals, which will operate on a competitive basis, will be adapted from the Sustenta MGS and included in the PIM.** FNDS will officially launch a 'call for proposals', inviting the submission of concept notes and preliminary supporting documentation. Only those selected at this stage will be requested to submit a full application, including detailed business plan and additional supporting documents. The selection criteria will cover (a) technical and financial viability; (b) operational sustainability; (c) additionality; (d) contribution to sustainable natural resources management/conservation; (e) geographical scope; (f) environmental safeguards; and (g) social safeguards.

12. **Community-based procurement will be explored where viable, ensuring that beneficiaries lead the procurement of their assets with assistance from FNDS.** A simplified procurement manual will be adapted from Sustenta, guided by the World Bank Procurement Guidelines and following established market practices, and will include the required forms and templates.

13. **The MGU will be responsible for performing due diligence on the use of the funds.** Disbursements will be made in tranches based on approved investments. Actual expenditures of the grants will be reported in addition to the disbursed funds to ensure that subsequent tranches are released for disbursement. The MGU will prepare quarterly financial statements based on the actual use of the funds and actual expenditures and submit them to the MozBio project coordinator, who will report these in the project's reports. All forms and templates required will be included in the PIM.

14. **The MGU will ensure that disbursements for the beneficiaries will be made directly to the beneficiary's commercial dedicated account in tranches and based on the approved investment plan.** The beneficiary bears full legal responsibility for this account, and the expenditures made will be reported in addition to the disbursed funds to ensure that subsequent tranches are released for disbursement. Details on how it will be processed are included in the Sustenta Simplified Disbursement Manual.

15. **FNDS will ensure collection of baseline data and will monitor the impact of the program on beneficiaries.** As such, the data will feed into the project's overall M&E system and guide any applicable adaptations during project implementation.

ANNEX 4: Economic Analysis

Overview

1. MozBio 2 aims to improve management of targeted CA landscapes and enhance the living conditions of communities in these areas. MozBio 2 finances activities at the national level and at the level of CA landscape. Component 1 aims to improve the enabling policy and institutional environment, human resource capacity, and financial sustainability of the CA system. Component 2 expects to improve the management effectiveness of the target CAs by addressing operational and management constraints such as insufficient infrastructure, staff, equipment and overall budget. Component 3 promotes conservation-compatible rural development, livelihood programs, and sustainable landscape management in target areas. Expected results include a significant increase in area under sustainable landscape management practices, as well as rural households and local communities connected to sustainable value chains. The project description outlines multiple climate change adaptation and mitigation co-benefits. The project is expected to benefit local communities through promotion of conservation-compatible livelihood activities in tourism, agriculture, and value-added processing, as well as improved skills. Communities will also benefit from increased quality of the natural resource base, such as clean water. The government and the conservation institutions will benefit from capacity-building activities, knowledge exchanges, improved regulations, and management of CAs; additional sources of sustainable financing; and revenue from increased tourism activities.

Economic Analysis Approach and Assumptions

2. This annex presents an analysis of the economic benefits generated by the proposed project compared to the costs. This ex ante economic analysis focused on three readily quantifiable benefit and cost streams to assess overall project feasibility.

- **Tourism benefits** include increased arrivals and associated spending. The government will capture some of this spending as taxes. There will be multiplier effects of the tourism spending in the country and in the target landscapes.

- **Community livelihoods and resilience benefits** include income improvement for 9,500 households or about 50,000 people. Households benefits in the form of increased income, employment, and skills from interventions on climate-friendly rural development activities, climate-smart agriculture, and links to sustainable value chains. There will be also tangible rural household adaptation/resilience co-benefits due to increased availability of environmental services (such as water access, food, fiber, and less extreme weather). There is also the benefit of reduced uncertainty, variability of returns, and average ‘losses’ due to poor practices or rainfall variability.

- **Ecosystem service benefits** include both quantifiable and less tangible benefits. Reducing GHG emissions through enhancing soil carbon stocks, SLM, CSA, land restoration, and reforestation is the most readily quantified ecosystem service. Other benefits include improved water quality and quantity, improved habitat for biodiversity habitat and protection of wildlife. These benefits can be described qualitatively and serve as an added increment of benefit beyond what can be readily counted.

3. **Model and scenarios.** A spreadsheet model was developed to compare the stream of benefits and costs under various scenarios using NPV analysis, which discounts all monetary streams to a common base year. 'With-project' and 'without-project' scenarios are examined to assess the incremental benefits generated by the project. In the 'without-project' scenario, in the target areas, the environmental situation is likely to continue to decline, with continued forest loss and degradation, declining quality of soils and agricultural output, and continued high emissions of greenhouse gases. Communities and smallholder farmers would continue subsistence agricultural practices, which include clearing and burning, with low productivity and value added. In these conditions, project interventions would be considered positive even if they only slowed the continuing negative trends. For example, interventions that slow down deforestation and forest degradation can be considered a benefit that results as a quantifiable amount of GHG not emitted into the atmosphere compared to the 'without-project' baseline. Similarly, interventions that help household incomes to remain stable can be considered a benefit compared to declining agricultural productivity under the 'without-project' scenario. Interventions that stabilize habitat, protect wildlife, and improve park management capacity should improve the quality of the tourism experience and result in more arrivals and more spending, relative to the 'without-project' scenario.

4. **Time horizon and discount rate.** The economic analysis focused on the generation of benefits and costs over the life of the project and (separately) for a total period of 20 years. Some benefits (for example, improved agricultural practices at household level) will continue after the project closes. The analysis was conducted for a range of social discount rates from low values (that tend to place more weight on distant future benefits) to higher values (that place more weight on the near-term costs).

5. **Other benefits.** A range of other intangible and indirect economic benefits will likely result from the project. For example, the project is expected to reduce deforestation and degradation and promote reforestation as well as trees in the agricultural landscape and thus would have a positive effect on soil conservation and reducing soil erosion. Due to measurement issues, only emission reductions that result from reduced deforestation were included. Beyond these direct benefits, the project should increase local generation of environmental services, such as improved water quality, reduction in climate hazards such as flooding and drought, and increased quality of habitat to sustain biodiversity. Beyond income effects associated with livelihoods, the project will likely produce indirect benefits among the population of the area, including increased resilience to external shocks, improved nutrition, and enhanced governance effects, including strengthened self-governance capacity of communities and community groups, which could then lead to improved access to and delivery of public services, such as improved schooling and public infrastructure. This wide range of benefits is discussed further, but there is no urgency to quantify these benefit streams because the basic results already indicate substantially positive benefits and robustly demonstrate the economic feasibility of the project.

Costs

6. The project costs, as outlined in the disbursement table of the PAD Datasheet, are straightforward. This is the cost of the investment in interventions over the life of the project from 2019 to 2024. As the costs are distributed over time, they are also subject to discounting assumptions, identical to the benefit streams.

Tourism Benefits

7. **Tourism benefits** are quantified primarily based on 'arrivals' information, average spending, and average stay length. Some of these are reported in national accounts, with refinements of the estimates based on data from the Dados de Referencia de Turismo, 2017, on a per province basis; Environment Business and Development Group (EBDG) and Yellow Railroad International Destination Consultancy (2011) Tourism Value Chain Analysis: Kenya, Mozambique, Ghana - Part 3: Tourism in Vilankulo and Bazaruto Archipelago National Park, Mozambique. London, UK: EBDG. International tourism arrivals and spending for the MSR (30,000 per year) are much higher than for the other two remote landscapes (500 for Chimanimani and 2,000 for Marromeu). This analysis conservatively assumed a 5 percent increase in overall tourist spending, through the combined effect of increased arrivals, increased spending (currently US$235/day), and increased stay (currently 2–4 days). Multiplier benefits of the tourists' spending on local food, transport, and lodging and the employment created are not quantified in this analysis but represent an additional stream of benefits that helps ensure that the overall conclusion is based on conservative assumptions. Under these assumptions, the present value of incremental tourism revenues during the project life range from US$6.4 million to US$9.6 million with discount rates from 15 percent to 3 percent. Over a 20-year horizon, these benefits would be 50 percent to 100 percent higher, in the range of US$9.67 million to US$23.0 million.

Livelihoods Benefits

8. As noted, the project will provide support, TA, and training to broaden livelihood opportunities in climate-friendly production techniques and access to markets for 8000 beneficiary households, representing 40,000 rural people. Currently, rural households earn less than the national average (World Bank World Development Index, 2016) or about US$375 per capita per year. If the project can achieve even a 10 percent increase in the value of household earnings, this would represent an NPV benefit stream of US$6.9 million to US$10.3 million over the project life and US$10.3 million to US$24.5 million over 20 years (with the same discount rate assumptions ranging from 3 percent to 15 percent). Any secondary, spill-over, or long-term effects triggered by increased incomes, such as better access to health services, improved education, or overall positive impacts on the economy as a whole, are not estimated. Any reinvestment or growth beyond the 10 percent increment in overall earnings per year, a figure which can be easily adjusted in the model, has not been assumed. The quantitative analysis did not analyze opportunity costs, because a 10 percent increase in net earnings is being assumed, so any opportunity costs are included under that sweeping assumption.

Environmental Services - Emission Reduction Benefits

9. The value of emission reductions is estimated based on a per hectare level of carbon sequestration in local area soils and forests (comparable to the values in Ex-Ante Carbon Emissions Tool (EX-ACT) emissions estimation tool of the Food and Agriculture Organization [FAO]), the expected improvement relative to the baseline (with deforestation and forest degradation at a relatively high rate at about 1 percent per year) and an estimate of the social value of avoiding emissions ('price path of carbon,' see below). The areas affected are based on the project design and expected impact. The reduction in rate of forest loss and degradation is taken from the analysis in annex 5, which concludes that emission reductions would be in the range of 550,000 tons per year, if deforestation can be reduced by 30 percent from the existing rate of deforestation (not the level). In this analysis, however, a range of lower reductions in deforestation rate was examined, even 7.5 percent and 15 percent. This is to ensure that the assumptions are conservative and achievable for the economic analysis.

10. To place a value on the social/global/economic benefits of reducing carbon emissions, the World Bank guidance on the shadow price/social value of carbon was followed (see box 4.1). The recommended valuation ranges from US$40 to US$80 per ton of CO_2e in 2020—which is substantially above market prices of carbon being paid in the foreseeable future but reflects the value from the long-term view of stabilizing the climate and preventing potentially disastrous outcomes. These figures may seem high relative to prices seen in current markets, but these values ('shadow prices') are designed to reflect the negative implications of GHG emissions for the global climate and economy. This is not an optimistic price path but instead reflects the expected level of future damages/costs of climate change due to continued GHG emissions. In other words, the shadow price reflects what society should be willing to pay (per ton of CO_2) to prevent/avoid the future costs that will be imposed by climate change.

Analytical Results and Sensitivity Analysis

11. This ex ante economic analysis demonstrates positive benefit-cost results across a range of sensitivity analyses and assumptions (see table 4.1). The positive results were robust to variations in the estimated impact or performance of the project interventions, discount rates, and carbon prices. The sensitivity analysis is designed to show that the positive economic result is not dependent on a high price of carbon but is in fact robust to changes in carbon prices, interest rates, and productivity/performance assumptions.

12. The results of several simulated scenarios (combinations of key assumptions) of project benefits and costs are summarized in table 4.1, which compares the NPV of both costs and benefits for each benefit stream under a range of carbon prices and discount rates and for the life of project and for a 20-year time horizon. This shows that estimated benefits exceed costs in both the short run and long run under a range of conservative assumptions. Some more extreme combinations of assumptions were also tested to identify the breakeven point for certain parameters, as discussed earlier. Though carbon benefits dominate the results, they are only a third to a half of the total, depending on the combination of assumptions.

13. Sensitivity analysis was applied to assess the effects of varying key assumptions, notably the social/global value of carbon, the improvement level of livelihood and tourism interventions, and the social discount rate, ranging from 3 percent to 15 percent. The breakeven carbon price that would cause the benefits to just equal the costs was also checked. These quantitative assessments help demonstrate that the project produces substantially positive net benefits under a wide range of reasonable price and performance scenarios.

14. This cost-benefit analysis does not depend on high carbon prices for its positive conclusion but rather examines a range of possible carbon values through sensitivity analysis and calculates the breakeven carbon price. For example, based on these assumptions and a range of discount rates, the value of carbon represents less than half of the overall benefits estimated—and these were based on very marginal increases in tourism revenue and local livelihood values.[20] For the base set of assumptions and a 6.0 percent discount rate, the project breaks even at a carbon price of US$8–US$12 over the life of

[20] In the base analysis, it was assumed that tourism revenue would increase by only 5 percent. Note that each 1 percentage point increase in this assumption increases the overall benefit estimation by about US$2 million. Similarly, for livelihoods, a 1 percentage point increase in the assumption of livelihood improvement (base assumption = 10 percent) yields a US$1 million increase in the overall benefit estimation.

project. Though, in this case, the 20-year time horizon still yields a positive benefit-cost ratio of 2.1. If the carbon price were set at US$5.5 per ton (too low for a reasonable social value), then the project would still break even or exceed the costs when tourism benefits increase by 8 percent instead of only 5 percent (even a 2.5 percent increase in arrivals coupled with a 2.5 percent increase in spending would yield an increase of 5 percent in overall revenue). This shows how different parts of the model interact to produce the overall robust result.

Table 4.1. Mozambique Conservation Areas for Biodiversity and Development - Phase 2

MOZAMBIQUE CONSERVATION AREAS FOR BIODIVERSITY AND DEVELOPMENT - PHASE 2					
Economic Analysis - Results of Scenarios and Sensitivity Assumptions					
	NPV (Project life)				
Discount Rate	6%	6%	6%	15%	3%
Carbon Price Discount	40%	40%	22%	22%	22%
Deforestation reduction, relative to 30%	25%	50%	50%	50%	50%
Expected Costs - Disbursements	($31.19)	($31.19)	($31.19)	($22.28)	($35.23)
TOTAL ESTIMATED BENEFITS	**31.30**	**42.77**	**31.55**	**23.44**	**35.25**
A. TOURISM plus REVENUES	$8.63	$8.63	$8.63	$6.43	$9.63
B. COMMUNITY LIVELIHOODS & RESILIENCE BENEFITS	$9.21	$9.21	$9.21	$6.86	$10.28
C. ECOSYSTEM SERVICE BENEFITS	$13.33	$24.69	$13.58	$10.05	$15.20
BENEFIT COST RATIO	**1.00**	**1.37**	**1.01**	**1.05**	**1.00**
	NPV (Over 20 Years)				
Expected Costs - Disbursements	($32.28)	($32.28)	($32.28)	($24.85)	($35.51)
TOTAL ESTIMATED BENEFITS	**67.24**	**93.30**	**67.81**	**36.45**	**88.44**
A. TOURISM plus REVENUES	$17.72	$17.72	$17.72	$9.67	$22.99
B. COMMUNITY LIVELIHOODS & RESILIENCE BENEFITS	$18.93	$18.93	$18.93	$10.33	$24.55
C. ECOSYSTEM SERVICE BENEFITS	$30.29	$56.10	$30.85	$16.29	$40.50
BENEFIT COST RATIO	**2.08**	**2.89**	**2.10**	**1.47**	**2.49**

15. **Qualitative benefits.** Beyond the quantitative comparisons, the project is expected to have significant development benefits given the broader rural development setting where it will be implemented. Providing additional livelihood opportunities in rural areas can yield important secondary effects, for example, with respect to improving agriculture production and empowering communities to seek better access to education and health services. There is potential to catalyze development momentum in sustainable management of natural resources and potential for replicability and continuity beyond the lifetime of the project.

16. **Beyond the readily quantified benefit streams included in this analysis, a wider range of additional benefits can be expected**, including local and downstream environmental service benefits (for example, water retention and quality, tree cover, and shade and pollination), including habitat and biodiversity conservation. Livelihood benefits and investments in productivity that arrive after the project implementation period were only quantified up to 20 years, even though it is likely

that the target areas and communities will continue to generate positive incremental changes compared to the 'without-project' situation. While this approach systematically undervalues project benefits, it underscores the robustness of the quantitative analysis of benefits, considering that any additional unvalued benefits would only add to the positive evaluation of the project. Broader economic benefits generated by the project may also include learning, as well as replication of the positive outcomes and practices to wider areas in Mozambique. The project can serve as an important catalyst for generating such changes with impacts.

Box 4.1. World Bank Guidance Note on Shadow Price of Carbon in Economic Analysis (November 2017)

This guidance was developed to help World Bank staff value carbon emissions in economic analysis of investment project financing. In 2015, the UNFCCC Parties agreed to limit global warming to less than 2°C by 2100. In the Climate Change Action Plan, the World Bank committed to support the achievement of these goals. To help implement this commitment, a shadow price of carbon is used in economic analysis of projects.

The World Bank's guidance is based on the High-Level Commission on Carbon Prices, led by Joseph Stiglitz and Nicholas Stern, that concluded that a range of US$40–US$80 per ton of CO_2e in 2020, rising to US$50–US$100 per ton of CO_2e by 2030, is consistent with achieving the core objective of the Paris Agreement. In line with this analysis, the World Bank guidance recommends that the project's economic analysis use a low and high estimate of the carbon price path increasing in this manner: starting at US$40 and US$80, respectively, in 2020 and increasing to US$50 and US$100, respectively, by 2030. This represents an implicit growth rate of 2.25 percent per year of the social value of carbon.

Source: http://pubdocs.worldbank.org/en/911381516303509498/2017-Shadow-Price-of-Carbon-Guidance-Note-FINAL-CLEARED.pdf.

ANNEX 5: GHG Accounting

COUNTRY: Mozambique
Mozambique Conservation Areas for Biodiversity and Development - Phase 2

1. This annex presents an ex ante assessment of the net emissions reduction calculations of the project with use of the EX-ACT tool. In summary, the project activities which will mainly provide emissions reductions are the strengthening of CAs through avoided deforestation. Other activities include reforestation and restoration of different landscapes. In total the project will help reduce emissions, generating total net emissions reductions of 11,085,567 tCO_2eq over a period of 20 years.

2. **Background and policy context on climate change mitigation.** Mozambique's overall forest cover store around 5.6 billion tons of CO_2eq. Miombo dry forests are the main forest types found in the country. These are classified as tropical and subtropical grasslands, savannas, and shrubland biomes. CAs cover 23 percent of the country, local people suffer pressure from conversion and degradation of natural habitats (including fire for agriculture and pasture expansion) and overexploitation of natural resources (plants, wildlife, including fish).

3. **Climate change has acquired prominence in Mozambique's political agenda.** In 2012, National Climate Change Strategy (ENMC) 2013–2025 was adopted, which is structured around three core themes: (a) adaptation and climate risk management, (b) mitigation and low carbon development, and (c) cross-cutting issues. These include institutional and legal reform for climate change, research on climate change, and training and technology transfer. The implementation of the ENMC is planned in three phases, where the first phase (2013–2015) focuses on adaptation measures and poverty reduction and identifying opportunities for the development of low-carbon economy in local communities.

4. **The ENMC was preceded by a range of other policies which acknowledged the close connection between climate change, poverty and economic development.** In 2003 Mozambique submitted a national communication to the UNFCCC—the second communication is in draft—identifying seven sectors that are particularly vulnerable to climate change. In 2007, the National Adaptation Program of Action proposed immediate adaptation strategies and soon after the National Poverty Plan 2011–2014 proposed measures to reduce disaster risk and climate change adaptation, including, among others, the promotion of conservation agriculture or a program for reforestation and reducing emissions from deforestation and forest degradation (REDD) and establishing carbon stocks (REDD+). The country is currently finalizing its national REDD+ strategy.

5. **Mozambique is also implementing a program for REDD+ Program.** The National REDD+ strategy development is informing the government's approaches to target interventions to key drivers of deforestation and address institutional and capacity gaps. The strategy guides interventions, targeting Mozambique's key drivers of deforestation in partnership with all relevant stakeholders, as well as highlighting important institutional and capacity gaps that need to be filled.

6. **World Bank mandate and accounting methodology.** In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct GHG emission accounting for investment lending. The

quantification of GHG emission is an important step in managing and ultimately reducing emission and is becoming a common practice for many international financial institutions.

7. **The World Bank uses EX-ACT developed by the FAO in 2010, to assess a project's net carbon balance.** This is the net balance of tons of CO_2 equivalent (tCO_2eq) GHGs that were emitted or carbon sequestered because of project implementation compared to a 'without-project' scenario compared to the 'initial' scenario. EX-ACT categorizes activities in five modules: land use change, crop production, livestock and grassland, land degradation, inputs, and investment. EX-ACT thus estimates the carbon stock changes as well as GHG emissions per unit of land, expressed in tCO_2eq per hectare and year.

8. **Project activities relevant for the analysis.** The project will be implemented during a period of five years. The planned activities will target strengthening the management of CAs in three landscapes: Elephant Coast Landscape (MSR), Chimanimani Landscape, and Marromeu Landscape (Marromeu Reserve and Coutadas 10, 11, and 14), thus reducing deforestation. The most recent national MRV REDD+ assessment (2003–2013) reports forest data and deforestation rates in each targeted landscape. Under the Marromeu Landscape, mangrove forests are found but not included in this assessment as it was not assessed under the national monitoring assessment. Project activities are expected to contribute to a reduction of the deforestation rate by 30 percent within the three landscapes.

9. **The PDO is to improve management of target conservation area landscapes and enhance the living conditions of communities in and around these conservation areas**. The project has three components. Component 1 has a national scope and focuses on strengthening the three key institutions promoting biodiversity conservation (ANAC, BIOFUND, and FNDS) and human resources for the entire CA system through the 'Conservation Leadership' initiative. Component 2 aims to enhance management of target CAs. Component 3 promotes conservation-compatible rural development and ILM in target landscapes.

10. **Description or project area.** The project areas are found to be in tropical and moist climate regime; the project implementation is 5 years and capitalization 15 years; with Low Activity Clays (LAC) soil type. Table 5.1 provides an overview of project activities and related assumptions for the 'with-project' and 'without-project' scenario. Tier 3 coefficients are used for assessing the mitigation potential from avoided deforestation and Tier 1 coefficients were used throughout for the other activities, and linear dynamic of change is assumed. It is assumed that the 'without-project' situation is the same as 'with project', unless otherwise indicated.

11. **Project activities.** The project expects to contribute to reducing deforestation by 30 percent within the three proposed landscapes from the current expected scenario of 86,219 ha of deforestation for five years to 60,353 ha. The project also aims to introduce SLM practices for cereals and horticulture on around 2058 ha. Additionally, the project will buy around 14 cars that are estimated to work 254 days per years and drive around 100 km every day. Car consumption is estimated to be 0,007 m^3 of gasoline per working day.[21]

[21] The project plans to finance the rehabilitation of preidentified roads and related structures, focusing on critical spots and ensuring the continuity of traffic between specific points of origin and destination, especially on the Elephant Coast Landscape. Within this landscape, only 3 km (from the main road to the MSR main entrance) will be built. However, more roads within the CAs might be improved and the results will be updated.

Table 5.1. Inputs to EX-ACT

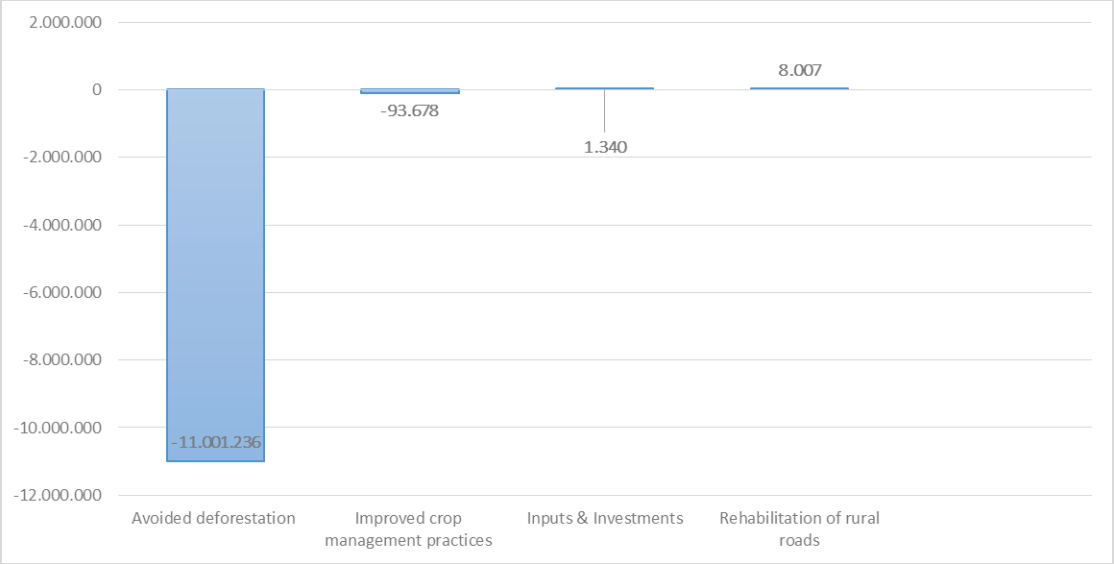
EX-ACT Module Project Activity	Initial Situation	Without Project	With Project
Reduced deforestation rate in tropical dry forests by 30%; with fire use	1,103,602 ha of natural forest	1,017, 383 ha of native forest. Around 86,219 ha of forest lost over five years resulting mainly due to annual cropping.	1,043, 249 ha of native forest. Around 60,353 ha of forest lost over five years resulting mainly due to annual cropping.
Improved agronomic practices - cereals	0	0	1, 1014 ha
Conventional agronomic practices - cereals	2,340 ha	2,340 ha	1,326 ha
Improved agronomic practices - horticulture	0	0	1,014 ha
Conventional agronomic practices - horticulture	2,340 ha	2,340 ha	1,326 ha
Inputs and investments (cars and gasoline)	—	—	24.9 m^3per year
Rehabilitation of rural roads and infrastructures	0	0	35,000 m^2

12. **Results.** The project could be a net carbon sink of −11,085,567 tCO_2eq over a period of 20 years, resulting in a net balance of −554,278 tCO_2eq per year. Figure 5.1 and table 5.2 show the impact of each activity over 20 years. Avoided deforestation constitutes a share of 99 percent of mitigated tCO_2eq, followed by improved crop management practices. The acquisition of cars and construction of infrastructures are the source of GHG emissions expected to be generated by this project. However, both activities will contribute with only 467 tCO_2eq per year into the atmosphere.

Table 5.2. Results Per Activities; all GHG in tCO_2eq

Activities	Gross Fluxes (20 years)		Net Carbon Balance	Result Per Year		
	Without Project	With Project		Without Project	With Project	Net Carbon Balance
Avoided deforestation	36,670,363	25,669,126	−11,001,236	1,833,518	1,283,456	-550,062
Improved crop management practices	−30,883	−124,560	−93,678	−1,544	−6,228	−4,684
Inputs and investments	0	1,340	1,340	0	67	67
Rehabilitation of rural roads and infrastructures	0	8,007	8,007	0	400	400
Total	36,639,480	25,553,913	**−11,085,567**	1,831,974	1,277,696	**−554,278**
Per hectare	33	23	−10			
Per hectare per year	1.7	1.2	-0.5			

Figure 5.1. Net Carbon Balance Per Project Activity [Source: this study].



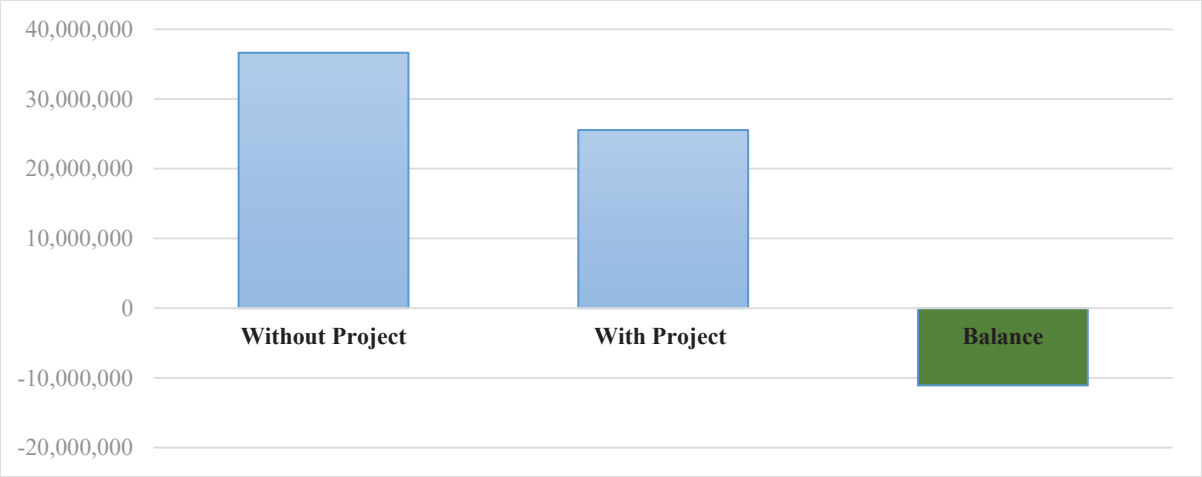
13. **Sensitivity analysis.** The sensitivity analysis assesses the impact of a change in reduction of deforestation rate to 10 percent and 50 percent instead of the anticipated 30 percent. It also assesses the impact of a change in adoption rate of improved crop management practices to 30 percent and 60 percent (from current 100 percent). Also changes in moisture regime due to climate change from moist to wet or dry are assessed. The results are shown in table 5.3 and demonstrate that the project remains a net carbon sink. Changes in the deforestation rates efficiency to 50 percent have the largest impact and can increase the carbon sink potential by 68 percent while reducing the efficiency from 30 percent to 10 percent has large negative impacts on the carbon mitigation, resulting in a mitigation potential reduction of 66 percent. The impact of a reduced deforestation rates is more severe than the possible changes on climate regimes within the three landscapes.

Table 5. 3. Results of Sensitivity Analysis

	Results	
	Final Balance, tCO_2eq	**Change (%)**
Initial results	**−11,085,567**	-
Improved crop management practices		
30%	−11,019,974	+0.6
60%	−11,048,059	−0.3
Change in reduction of deforestation rate		
To 10%	−3,747,582	+66
To 50%	−18,670,098	−68
Change in moisture regime:		
Dry moisture regime	−10,228,981	+8
Wet moisture regime	−11,649,287	-5

14. **Conclusion.** The National REDD+ strategy aims to avoid the emission of around 170 $MtCO_2eq$ until 2030. The ex ante analysis shows that the project could be a sizeable net carbon sink of 11 $MtCO_2eq$ over 20 years, which is approximately 6 percent of the mitigation suggested by the REDD+ strategy. Avoided deforestation has the largest potential for mitigating GHG emission as the sensitivity analysis shows that changes in forest-related activities have the highest potential to reduce the project's net carbon balance (−68 percent). However, the project also shows that changes in moisture regime within the landscapes could have significant impact on the GHG mitigation potential.

Figure 5.2. Carbon Balance as a Result of the Project Implementation [Source: this study].



15. **Caveats.** There are several aspects that need to be considered when interpreting the results: this is a conservation demand-driven project and not all the proposed activities will be implemented as well not all the non-proposed activities will not be implemented. In addition, the project is open to support a range of activities in the project areas within the communities, not only those presented here, which can cause a shift in activities with implications on the net carbon balance. Uncertainty remains regarding the adoption rate of many of the activities leading to the reduction of deforestation, especially because the length of these kinds of projects is short (only five years).